

EPA United States Environmental Protection Agency Washington, DC 20460 Work Assignment		Work Assignment Number 4-41								
		<input type="checkbox"/> Other <input type="checkbox"/> Amendment Number:								
Contract Number EP-C-12-021	Contract Period 09/26/2012 To 09/25/2017 Base Option Period Number 4	Title of Work Assignment/SF Site Name Life Cycle Assessment								
Contractor EASTERN RESEARCH GROUP, INC.		Specify Section and paragraph of Contract SOW See PWS								
Purpose: <input checked="" type="checkbox"/> Work Assignment <input type="checkbox"/> Work Assignment Close-Out <input type="checkbox"/> Work Assignment Amendment <input type="checkbox"/> Incremental Funding <input type="checkbox"/> Work Plan Approval		Period of Performance From 10/27/2016 To 09/25/2017								
Comments:										
<input type="checkbox"/> Superfund Accounting and Appropriations Data <input checked="" type="checkbox"/> Non-Superfund										
SFO <input type="checkbox"/> Note: To report additional accounting and appropriations date use EPA Form 1900-69A. (Max 2)										
Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code
1										
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Authorized Work Assignment Ceiling										
Contract Period:		Cost/Fee:		LOE:						
09/26/2012 To 09/25/2017										
This Action:										
Total:										
Work Plan / Cost Estimate Approvals										
Contractor WP Dated:				Cost/Fee				LOE:		
Cumulative Approved:				Cost/Fee				LOE:		
Work Assignment Manager Name Diana Bless <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="display: flex; justify-content: space-between;"><div>(Signature)</div><div>(Date)</div></div>							Branch/Mail Code: Phone Number: 513-569-7674 FAX Number:			
Project Officer Name Meghan Hessenauer <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="display: flex; justify-content: space-between;"><div>(Signature)</div><div>(Date)</div></div>							Branch/Mail Code: Phone Number: 202-566-1040 FAX Number:			
Other Agency Official Name <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="display: flex; justify-content: space-between;"><div>(Signature)</div><div>(Date)</div></div>							Branch/Mail Code: Phone Number: FAX Number:			
Contracting Official Name Brad Heath <div style="border-bottom: 1px solid black; width: 100%; text-align: center;"> </div> <div style="display: flex; justify-content: space-between;"><div>(Signature)</div><div>10/27/2016</div></div>							Branch/Mail Code: Phone Number: 513-487-2352 FAX Number:			

**PERFORMANCE WORK STATEMENT
CONTRACT EP-C-12-021
WORK ASSIGNMENT 4-41**

TITLE: Life-Cycle Assessment and Cost Analysis of Water and Wastewater Treatment Options for Sustainability

WORK ASSIGNMENT CONTRACTING OFFICER'S REPRESENTATIVE

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ALTERNATE WORK ASSIGNMENT CONTRACTING OFFICER'S REPRESENTATIVE

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FAX: (513) 569-7111

PERIOD OF PERFORMANCE: October 27, 2016 to September 25, 2017

BACKGROUND

As one of the largest federal water research and development laboratories in the United States, the Environmental Protection Agency generates innovative solutions that protect human health and the environment. The Office of Research and Development's (ORD) Safe and Sustainable Water Resources (SSWR) Program is the principle research lead seeking metrics and tools to compare the tradeoffs between economic, human health and environmental aspects of current and future municipal water and wastewater services. Changes in drinking water and wastewater management have typically resulted from new regulations, which focus on developing and implementing additions to the current treatment and delivery schemes. However, these additions are generally undertaken in the absence of a system's holistic view and result in transferring issues from one problem area to another. Future alternatives not only need to address the whole water services physical system, but also must address changes in human behavior, institutions, and water governance to aid in the provision of more sustainable water services such that water scarcity is eliminated. Furthermore, these sustainable systems must be based on resource recovery (water,

energy, nutrients etc.). Therefore, a range of metrics and tools need to be agreed upon to facilitate solutions that identify “next-generation” sustainable municipal water and wastewater systems, as well as to identify possible regulatory/policy steps to facilitate this evolution.

PURPOSE

The Contractor shall provide data collection and analysis which will then be used for establishing a model for using an LCA framework relevant to understanding water and wastewater management. In particular, the Contractor will focus on an application of a life cycle model for the US economy called USEEIO. Components of this model were developed in the previous period of performance for this work assignment. For this research, an EPA Technical Team consisting of experts in LCA and sustainability analysis will interact with the Contractor to provide timely, pragmatic, and decisive responses to questions, which will inevitably arise regarding overcoming obstacles encountered in the course of the work.

GENERAL REQUIREMENTS

In providing support under the tasks described in the WA, the contractor also shall adhere to the following general requirements:

Databases and Computer programs

The contractor shall ensure that the updated databases, computer programs and the corresponding documentation developed under this contract are accessible to the Contract Level Contracting Officer’s Representative (CL-COR) and the WACOR/AWACOR. For better quality assurance and control, all changes in databases are documented chronologically in the databases according to QAPP requirements. The contractor shall use software packages that are relevant to particular statistical analysis, generally acceptable by experts as being reliable for the statistical analysis, and allow for any necessary data modification. The program shall identify the origin of the input data sets (e.g., version X supplied by EPA on specific date).

Deliverables

The contractor shall provide documentation in computer files, and in hardcopy, upon specific request. When appropriate (e.g., in a report rather than data listing), the contractor shall clearly specify the methods, procedures, considerations, assumptions, relevant citations, data sources, and data that support the results and any recommendations. The contractor also shall document alternative methods, procedures, and assumptions that the contractor considered in the analysis. Further, the documentation shall be labeled with the name of the contractor and the EPA contract number.

The contractor shall ensure that documentation is created using, or easily converted to, Agency standard software formats (e.g., Microsoft Office) to facilitate EPA use and review.

Confidential Business Information

The contractor will be provided with technical information as determined by the WACOR who will also coordinate the transfer of all information. Some of the information provided by EPA may be Confidential Business Information (CBI). After receiving CBI, the contractor shall handle and analyze CBI under procedures specified in the approved contract CBI security plan and 40 CFR Part 2 Subpart B, and in accordance with contract requirements and limitations.

Contractor Identification

To avoid any perception that contractor personnel are EPA employees, the contractor shall assure that contractor personnel are clearly identified as independent contractors of EPA when attending meetings with outside parties or visiting field sites. Further, if the contractor has prepared briefing materials, the material should clearly indicate that they have been provided by a contractor working for EPA.

TASK DESCRIPTION

Task 1. Application of Environmental Support and Cost Metrics to an LCA Model

EPA ORD has been working for the past 5 years to develop new metrics for evaluating the sustainability of value chains for use in a life cycle (LCA) context. While a number of metrics have been considered, metrics for total environmental support (TES) and total cost (TC) have been advanced to the greatest degree.

The metric for total environmental support is based on a method of energy accounting called emergy. This metric measures total direct and indirect environmental requirements to support a value chain or material by summing the energy supporting land, water and other resources used over the life cycle of material/product. A library of characterization factors for emergy for use in life cycle assessment studies has been prepared by a contractor under technical direction of EPA and a report describing that library was provided. EPA is finalizing that library and a report describing it that will be made available to the contractor.

The metric for total cost, also called green net value added in the supply chain context, is a life cycle costing metric that also takes into account externality costs in the form of human health and environmental damages. A spreadsheet with characterization factors and steps for performing total cost calculations for LCI data are included in a spreadsheet.

EPA will share with the contractor with the original libraries and associated documentation for these metrics.

The objective of this work assignment is to demonstrate the application of these methods through augmentation of a full economy life cycle model and calculation of these metrics through that model. The USEEIO US LCI model that EPA has developed will be used for this case study.

In the previous period of performance, the contractor developed satellite tables for the USEEIO model for modelling land, water, mineral and energy use in the model. In this period of performance, the contractor will apply metrics in a case study of the USEEIO model.

Specifically, the Contractor will:

- 1 Prepare results of a case study LCA model
A case study of application of this metrics to the openIO model in openLCA for the US economy final demand. The case study should be performed within openLCA to the fullest extent possible. The results should include comparisons with other relevant LCIA methods

already available for use with the openIO model, such as total water use and GHG emissions.

Deliverable: LCA results plus final TES and TC LCIA methods or supporting spreadsheets used for calculations.

2. Prepare relevant sections for a manuscript describing this case study.

The contractor shall provide a written description of the methods used, results of the case study, and the potential benefits of these methods in the form that can be incorporated into a technical peer-reviewed manuscript.

Deliverable: Sections for a manuscript

SPECIAL CONSIDERATIONS

The contractor shall prepare an initial cost estimate for each task. Before starting an approved task, the contractor will meet with the WACOR or his/her technical advisor in order to ensure that all the steps in the task are clearly understood. Technical direction will be given to the contractor via the WACOR in the form of an email. Technical discussion, including, but not limited to, discussions of scheduling availability for planning around deliverables, troubleshooting regarding the task, issues with data interpretation, and/or other questions regarding the work assignment can be done between the contractor and the PIs and EPA Technical Team. Such discussion does not constitute technical direction.

Outputs shall be in the form of detailed monthly reports describing progress made in each task submitted to the CL-COR and WACOR by the 15th of the month. These reports shall include a summary of work that has been accomplished over the past month any problems that arose over the month, and a summary of deliverables produced over the month, if applicable. The monthly reports must include a summary of expenses for the period as it relates to the overall project budget. In addition, this work assignment status report shall provide the described work performed within each task and shall address problems and/or solutions (including issues relating to quality assurance and quality control), work planned for next reporting period, staffing, budget, and any changes in technical direction. EPA may monitor progress through regular meetings between the Contractor and the WACOR and the EPA Technical Team. Changes in procedures to overcome technical difficulties can be made by mutual agreement between the contractor and the WACOR/Technical Team.

ACCEPTANCE PROCEDURE FOR DELIVERABLES

Deliverables shall be delivered to the WACOR. The WACOR will advise the contractor of any problems with deliverables within 1 week after receipt. The contractor shall submit the revised deliverable within 3 calendar days after receipt of the WACOR's comments.

MANAGEMENT CONTROLS

The support provided is based on the specific tasks in this statement of work. Any changes will be addressed by amendments to the statement of work. Technical direction will be provided by the WACOR to the Contractor via email. Electronic copies of all work requests/technical direction will be available upon request to the CL-COR, WACOR, and Contract Specialist/Contracting Officer.

The Contractor shall ensure that its personnel are aware that they are not to proceed with any technical directives that are not addressed in this statement of work and/or that come from an unauthorized source.

SPECIAL RESTRICTIONS

The Contractor shall ensure personnel skills are maintained in accordance with the Contractor's Program Management Plan which has been incorporated under the terms of the contract by reference.

OTHER REQUIREMENTS

The contractor shall provide written notification to the contracting officer, project officer, and work assignment manager when 75 percent of the hours and/or funds have been spent on this work assignment.

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Contract Number EP-C-12-021			Contract Period 09/26/2012 To 09/25/2017 Base Option Period Number 4			Title of Work Assignment/SF Site Name Life Cycle Assessment				
Contractor EASTERN RESEARCH GROUP, INC.					Specify Section and paragraph of Contract SOW See PWS					
Purpose: <input checked="" type="checkbox"/> Work Assignment <input type="checkbox"/> Work Assignment Close-Out <input type="checkbox"/> Work Assignment Amendment <input type="checkbox"/> Incremental Funding <input checked="" type="checkbox"/> Work Plan Approval						Period of Performance From 10/27/2016 To 09/25/2017				
Comments:										
<input type="checkbox"/> Superfund Accounting and Appropriations Data <input checked="" type="checkbox"/> Non-Superfund										
Note: To report additional accounting and appropriations data use EPA Form 1900-69A.										
SFO <input type="checkbox"/> (Max 2)										
Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code
1										
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Authorized Work Assignment Ceiling										
Contract Period:		Cost/Fee: \$0.00		LOE: 0						
09/26/2012 To 09/25/2017										
This Action:		\$11,686.00		91						
Total:		\$11,686.00		91						
Work Plan / Cost Estimate Approvals										
Contractor WP Dated: 11/15/2016		Cost/Fee \$11,686.00		LOE: 91						
Cumulative Approved:		Cost/Fee \$11,686.00		LOE: 91						
Work Assignment Manager Name Diana Bless <div style="display: flex; justify-content: space-between;"> <div>_____ (Signature)</div> <div>_____ (Date)</div> </div>						Branch/Mail Code: Phone Number: 513-569-7674 FAX Number:				
Project Officer Name Meghan Hessenauer <div style="display: flex; justify-content: space-between;"> <div>_____ (Signature)</div> <div>_____ (Date)</div> </div>						Branch/Mail Code: Phone Number: 202-566-1040 FAX Number:				
Other Agency Official Name <div style="display: flex; justify-content: space-between;"> <div>_____ (Signature)</div> <div>_____ (Date)</div> </div>						Branch/Mail Code: Phone Number: FAX Number:				
Contracting Official Name Brad Heath <div style="display: flex; justify-content: space-between;"> <div>_____ (Signature)</div> <div>_____ (Date)</div> </div>						Branch/Mail Code: Phone Number: 513-487-2352 FAX Number:				

EPA United States Environmental Protection Agency Washington, DC 20460 Work Assignment						Work Assignment Number 4-44			
						<input type="checkbox"/> Other <input type="checkbox"/> Amendment Number:			
Contract Number EP-C-12-021			Contract Period 09/26/2012 To 09/25/2017 Base Option Period Number 4			Title of Work Assignment/SF Site Name Eval on Hydraulic Fracturing			
Contractor EASTERN RESEARCH GROUP, INC.				Specify Section and paragraph of Contract SOW See PWS					
Purpose: <input checked="" type="checkbox"/> Work Assignment <input type="checkbox"/> Work Assignment Close-Out <input type="checkbox"/> Work Assignment Amendment <input type="checkbox"/> Incremental Funding <input type="checkbox"/> Work Plan Approval						Period of Performance From 11/29/2016 To 09/25/2017			
Comments:									
<input type="checkbox"/> Superfund Accounting and Appropriations Data <input checked="" type="checkbox"/> Non-Superfund									
Note: To report additional accounting and appropriations data use EPA Form 1900-69A.									
SFO <input type="checkbox"/> (Max 2)									
Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars) (Cents)	Site/Project (Max 8)	Cost Org/Code
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Authorized Work Assignment Ceiling									
Contract Period:		Cost/Fee:			LOE:				
09/26/2012 To 09/25/2017									
This Action:									
Total:									
Work Plan / Cost Estimate Approvals									
Contractor WP Dated:					Cost/Fee		LOE:		
Cumulative Approved:					Cost/Fee		LOE:		
Work Assignment Manager Name Lisa Matthews <div style="display: flex; justify-content: space-between; border-top: 1px solid black; margin-top: 10px;"> (Signature) (Date) </div>							Branch/Mail Code: Phone Number: 202-564-6669 FAX Number:		
Project Officer Name Meghan Hessenauer <div style="display: flex; justify-content: space-between; border-top: 1px solid black; margin-top: 10px;"> (Signature) (Date) </div>							Branch/Mail Code: Phone Number: 202-566-1040 FAX Number:		
Other Agency Official Name <div style="display: flex; justify-content: space-between; border-top: 1px solid black; margin-top: 10px;"> (Signature) (Date) </div>							Branch/Mail Code: Phone Number: FAX Number:		
Contracting Official Name Brad Heath <div style="display: flex; justify-content: space-between; border-top: 1px solid black; margin-top: 10px;"> (Signature) (Date) </div>							Branch/Mail Code: Phone Number: 513-487-2352 FAX Number:		

**Performance Work Statement
Contract EP-C-12-021
Work Assignment 4-44**

Title: Evaluation of Information on Hydraulic Fracturing

Work Assignment Contracting Officer's Representative (WACOR):

Lisa Matthews
USEPA Headquarters
William Jefferson Clinton Building
1200 Pennsylvania Avenue, N. W.
Mail Code: 8101R
Washington, DC 20460

Phone: 202-564-6669
Fax: 202-564-2430
E-Mail: matthews.lisa@epa.gov

Period of Performance: November 29, 2016 through September 25, 2017

Background

At the request of Congress, EPA is conducting a study of the potential impacts of hydraulic fracturing for oil and gas on drinking water resources.

The contractor shall follow-up on work conducted under 3-44 of the previous option period.

The Contractor shall provide the deliverables outlined below to the WACOR. All text deliverables shall be compatible with MS Word and provided in both electronic and hard format.

WORK ASSIGNMENT TASKS

Task 0 – Prepare Work Plans and Monthly Reports

As part of this work assignment, the Contractor shall prepare a detailed work plan that describes the Contractor's approach to each of the following tasks, and includes a proposed schedule, staffing plan and budget for the overall work assignment. The Contractor's work plan shall include estimated Level of Effort (LOE) by task.

Deliverable 0A - Within 3 working days of receipt of the work assignment, the Contractor shall schedule a conference call with the WACOR and appropriate EPA and Contractor staff to clarify outstanding questions and confirm the schedule and specific tasks.

Deliverable 0B - The contractor shall submit a detailed work plan in accordance with contract requirements.

Deliverable 0C - The contractor shall provide EPA with monthly financial/technical progress reports. These monthly reports shall identify QA/QC activities performed to support implementation of this work assignment, problems encountered, and corrective actions taken.

TASK 1 – MEETING SUPPORT

EPA will continue state and tribal engagement and coordination associated with EPA’s Hydraulic Fracturing Drinking Water Assessment. EPA has also engaged with technical experts from key stakeholder groups, including industry, non-governmental organizations, other federal agencies and the academic community, in an effort to assure that we have ongoing access to a broad range of expertise and data outside the Agency, improve public understanding of the goals and design of the study, obtain timely and constructive feedback on data and analysis developed in the study, and assure that EPA is current on changes in industry practices and technologies so the Assessment reflects an up-to-date picture of hydraulic fracturing operations. Information sharing among technical experts from diverse backgrounds and interests is important to ensure that EPA has all the information it needs to provide the best available science.

The Contractor shall support these state engagement and broader stakeholder outreach efforts by assisting with the planning and coordination of meetings, webinars and briefings. Support duties may include: sending and tracking invitations; organizing and coordinating meeting materials; liaising with attendees and presenters; tracking and downloading presenters' slides; and preparing meeting folders. The Contractor may be asked to develop PowerPoint presentations for EPA. The Contractor may also be asked to assist with the set up and management of webinars and/or other teleconference services in support of the stakeholder effort. For purposes of preparing the work plan, the Contractor shall assume preparations for approximately 5 stakeholder briefings.

Deliverable 1A - The Contractor shall provide nametags and placards 1 week prior to meetings.

Deliverable 1B - Final meeting materials will be due by 3 business days prior to meetings.

TASK 2 – GENERAL TECHNICAL SUPPORT

Using information provided by the WACOR, along with information gathered or developed by the Contractor, the Contractor shall assemble information related to hydraulic fracturing as specified by the WACOR through written technical direction. The tasks may include work such as preparing 508-compliant PDFs of reports, fact sheets, presentations and other materials, or preparing materials to support EPA’s state engagement and broader stakeholder outreach activities. For purposes of preparing a work plan, the Contractor shall assume there will be about 5 documents, such as fact sheets, to make 508-compliant. Approximately 8 webinar recordings, along with 1 Final Assessment webinar recording will need audio transcription for closed captioning. The Contractor shall assume graphics will need to be updated or created. Printing documents and materials shall be assumed by the Contractor.

Quality Assurance and Quality Control

Any technical direction that involves the collection and/or analysis of environmental data will be carried out in accordance with ERG's existing EPA-approved Quality Assurance Project Plan (QAPP).

Deliverable 2.1 - Assignment due within 5 business days of receiving written technical direction or as stated in the technical direction.

Deliverable 2.2 – Recording Compliance: Adobe Connect webinar sessions (8) are currently on the HF Study site linked here: <https://www.epa.gov/hfstudy/public-outreach#webinars>.

The Contractor will be sent the session links in order to transcribe audio to closed caption each video. The captioned video will then be sent back to EPA to upload to YouTube. The Contractor will be asked to capture 1 webinar for the final assessment as well.

Deliverable 2.3 – Document Compliance: Approximately 5 fact sheets are expected to need 508 compliance.

Deliverable 2.4 – Graphics: The Contractor shall update or create graphics as needed.

Deliverable 2.5 – Printing: The Contractor shall print documents and materials, including binding and other documentation preparation related to the final assessment and study products.

CONFLICT OF INTEREST

The Contractor shall follow Conflict of Interest procedures for Work assignments in accordance with Contract Clauses: Ordering Procedures, Organizational Conflicts of Interest (EPAAR 1552.209-71), Notification of Conflicts of Interest Regarding Personnel (EPAAR 1552.209-73), and "Conflict of Interest Evaluation for Work assignments."

SPECIAL CONDITIONS/ASSUMPTIONS

Disclosure of information used in Conflict of Interest evaluation

The financial and professional information obtained by the contractor as part of the evaluation to determine existence of actual or potential conflict of interest is considered private and should not be disclosed to EPA or outside entities except as required by law or requested as part of a formal investigation by the EPA Office of Inspector General, General Accountability Office, or Congressional Committee.

Notice regarding guidance provided under this work assignment

Guidance is strictly limited to technical and analytical support. The Contractor shall not engage in activities of an inherent governmental nature such as the following:

1. Formulation of Agency Policy
2. Selection of Agency priorities

3. Development of Agency regulations

Should the Contractor receive any instruction from an EPA staff person that the Contractor ascertains to fall into any of these categories or goes beyond the scope of the contract or Work assignment, the Contractor shall immediately contact the CL-COR or WACOR.

Management Controls

Frequent phone calls and/or meetings between the WACOR and contractor work assignment managers are required to discuss any questions that may arise during performance or completion of this work assignment. The contractor shall document these meetings and submit copies of this correspondence to the WACOR.

Per the technical direction clause EPAAR 1552.237-71 of the contract, the CL-COR and the WACOR are the only representatives of the CO authorized to provide technical direction. Per the technical direction clause, the CO and CL-COR will be provided with copies of all technical direction.

Travel

No travel is anticipated. All contractor travel must be approved by the CL-COR in advance.

Confidential Business Information

The contractor is not expected to need access to any CBI for this option period.

Meetings

To avoid the perception that contractor personnel are EPA employees, contractor personnel shall be clearly identified as independent contractors of EPA when participating in events with outside parties.

Limitation of Contractor Activities

The contractor will submit drafts of all deliverables to the WACOR for review prior to submission of the final product. The contractor will incorporate all WACOR comments into all final deliverables, unless otherwise agreed upon by the WACOR. The contractor will adhere to all applicable EPA management control procedures as implemented by the CO, CL-COR and WACOR.

Quality Assurance and Quality Control

The contractor will also provide EPA with monthly reports of QA activities performed during implementation of this work assignment. These monthly QA reports shall identify QA activities performed to support implementation of this work assignment, problems encountered, and corrective actions taken. If desired, the contractor may include this as a part of the contract required monthly financial/technical progress report.

EPA United States Environmental Protection Agency Washington, DC 20460 Work Assignment		Work Assignment Number 4-46								
		<input type="checkbox"/> Other <input type="checkbox"/> Amendment Number:								
Contract Number EP-C-12-021	Contract Period 09/26/2012 To 09/25/2017 Base Option Period Number 4	Title of Work Assignment/SF Site Name Interagency Nutrient Challenge								
Contractor EASTERN RESEARCH GROUP, INC.		Specify Section and paragraph of Contract SOW See PWS								
Purpose: <input checked="" type="checkbox"/> Work Assignment <input type="checkbox"/> Work Assignment Close-Out <input type="checkbox"/> Work Assignment Amendment <input type="checkbox"/> Incremental Funding <input type="checkbox"/> Work Plan Approval		Period of Performance From 11/18/2016 To 09/25/2017								
Comments:										
<input type="checkbox"/> Superfund Accounting and Appropriations Data <input checked="" type="checkbox"/> Non-Superfund										
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Total:										
Work Plan / Cost Estimate Approvals										
Contractor WP Dated:				Cost/Fee				LOE:		
Cumulative Approved:				Cost/Fee				LOE:		
Work Assignment Manager Name Meghan Hessenauer <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="display: flex; justify-content: space-between; font-size: small;"> (Signature) (Date) </div>							Branch/Mail Code: Phone Number: 202-566-1040 FAX Number:			
Project Officer Name Meghan Hessenauer <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="display: flex; justify-content: space-between; font-size: small;"> (Signature) (Date) </div>							Branch/Mail Code: Phone Number: 202-566-1040 FAX Number:			
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Contracting Official Name Brad Heath <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="display: flex; justify-content: space-between; font-size: small;"> (Signature) (Date) </div>							Branch/Mail Code: Phone Number: 513-487-2352 FAX Number:			

**Performance Work Statement
Contract EP-C-12-021
Work Assignment 4-46**

Title: Interagency Nutrient Challenge Visioneering Support

Work Assignment Contracting Officer's Representative (WACOR):

Troy Pierce
Phone: 228-679-5900
Fax: 228-679-5921
pierce.troy@epa.gov

Alternate Work Assignment Contracting Officer's Representative:

Lael Butler
Phone: 228-679-5900
Fax: 228-679-5921
butler.lael@epa.gov

Period of Performance: 11/18/2016 through 9/25/2017

Purpose and Background

The purpose of this work assignment is to support EPA's Office of Research and Development as they continue to lead the efforts of a federal interagency partner workgroup to spur market development of a nutrient sensor which is reasonably priced, operates in numerous different water body types and provides scientifically valid data.

Under the existing contract and current work assignment, the Contractor has been providing, and will continue to provide, expertise in nutrient pollution, water resources management and water quality issues; along with meeting planning and stakeholder outreach/engagement. All current Contractor tasks will continue.

General Work Assignment Requirements (PWS Section 3.0)

Deliverable Formatting and Terminology

Throughout this work assignment, the contractor shall provide draft and final reports to EPA in electronic format, with hard copy format also provided when directed by the work assignment manager. The contractor shall discuss the computer file formats to be used for word processing, spreadsheet, database and graphics with the WACOR prior to file preparation. The WACOR will identify for the contractor which documents will be posted on EPA's Effluent Guidelines

webpage. These documents posted to the Effluent Guidelines webpage must be Section 508 compliant.¹

Travel

Non-local travel by the contractor employees and/or subcontractors may be required to support the scope of this work assignment (e.g., workshop(s)/conference(s)/and or meeting(s) support). The contractor shall provide specific travel details and costs in a request for travel approval by the WACOR and the Contract Level Contracting Officer's Representative (CL-COR) before each trip occurs (as specified by the contract per clause H.32).

Event Expenses Not to Exceed \$20,000

No single event under this Work Assignment is anticipated to exceed \$20,000. The Contractor shall immediately notify the Contracting Officer (CO), CL-COR and WACOR of any anticipated event involving support for a meeting, conference, workshop, symposium, retreat, seminar or training that may potentially incur \$20,000 or more in cost during performance. Conference expenses are all direct and indirect costs paid by the government and include any associated authorized travel and per diem expenses, room charges for official business, audiovisual use, light refreshments, registration fees, ground transportation and other expenses as defined by the Federal Travel Regulations. All outlays for conference preparation should be included, but the federal employee time for conference preparation should not be included. After notifying EPA of the potential to reach this threshold, the Contractor shall not proceed with the task(s) until authorized to do so by the Contracting Officer.

Confidential Business Information

The contractor shall, at all times, adhere to Confidential Business Information (CBI) procedures when handling industry information. The contractor shall manage all reports, documents, and other materials and all draft documents developed under this work assignment in accordance with the procedures set forth in the "Security Plan for Handling Confidential Business Information Under the Clean Water Act" (September 2002) or its successor approved plans.

Identification as Contracting Staff

To avoid the perception that contractor personnel are EPA employees, contractor personnel shall be clearly identified as independent contractors of EPA when participating in events with outside parties and visiting field sites. When speaking with the public the contractor should refer all interpretations of policy to the WACOR.

Limitation of Contractor Activities

The contractor shall submit drafts of all deliverables to the WACOR for review prior to submission of the final product. The contractor shall incorporate all WACOR comments into all final deliverables, unless otherwise agreed upon by the WACOR. The contractor will adhere to all applicable EPA management control procedures as implemented by the CO, CL-COR and WACOR.

¹ See <http://www.epa.gov/epahome/accessibility.htm>.

Deliverable Due Dates

For the purpose of developing this work plan, the contractor shall assume the deliverable due dates in the tables for each task presented further. Major technical deliverables shall be subject to internal contractor peer review by an expert(s) not directly involved in the mainstream Work Assignment tasks. Deliverables will be prepared with proper adherence to EPA style and format requirements.

Tasks

Task 1: Program Management

The contractor shall prepare and submit a detailed work plan that outlines the approach and methodology that shall be used to perform the tasks identified in this Work Assignment. The work plan shall specify the work to be done for each task, and the allocation of personnel, hours and budget by task and deliverables. The work plan shall be submitted to the CO, CL-COR and WACOR in accordance with contract requirements.

This task also includes contract management such as communications between EPA Contracting Officer Representatives and their respective contractor counterparts. These communications would concern the progress made on the work assignment tasks and coordination of activities to facilitate optimal contractor performance.

The contractor shall provide electronic copies of the monthly progress reports to the WACOR and PO. Each progress report shall describe the technical work and expenditures for the same time period as the corresponding invoice. The reports shall list by task the amount of work completed and include a table of hours by personnel for each task. The reports also shall identify any problems or difficulties. The contractor shall inform the CO, CL-COR and WACOR in writing when 50%, 75%, and 90% of the allocated hours or dollars have been expended.

TASK 1 DELIVERABLES	DEADLINES
Work Plan	In accordance with contract requirements
Progress Reports	monthly

Task 2: Quality Assurance

EPA policy requires that an approved Quality Assurance Project Plan (QAPP) or Programmatic Quality Assurance Project Plan (PQAPP) be in place for work that involves the collection, generation, evaluation, analysis or use of primary environmental data. The QAPP or PQAPP defines and documents how specific data generation and collection activities shall be planned, implemented, and assessed during a particular project.

Background

Quality Assurance Project Plans are required under the Agency's Quality Assurance Policy CIO-2105, formerly EPA Order 5360.1 A2 (May 2000), and implementing guidance CIO-2105-P-01-

0 (May 2000). All projects that involve the generation, collection, analysis, and use of environmental data must have an approved Quality Assurance Project Plan (QAPP) in place prior to the commencement of the work. Examples of these environmental data operations are provided in **Table 2-1** below.

Table 2-1. Examples of work that involves the collection, generation, evaluation, analysis, or use of environmental data

Item	Examples
Data	Includes field sampling information (sample location information, flow measurements, temperature, pH, physical observations, etc.), laboratory measurements (e.g., chemical, physical, biological, radiological measurements), data collected from questionnaires, economic data, census data, and any other types of existing data (i.e., data generated for a different purpose or generated by a different organization)
Data generation	Includes field studies, laboratory studies, and generation of modeling output
Data collection	Includes field surveys, questionnaire surveys, literature searches, and third party data
Data evaluation	Includes data inspection, review, assessment, and validation
Data analysis	Includes statistical, engineering, and economic analysis, and testing, evaluation, and validation of methods and models; database creation, data extraction, and data manipulation
Data Use	Any use of data to support EPA decisions, regulations, policy, publications, or tools (including effluent guidelines, 304(m) program, standards, environmental assessments, and models, tools, or reports disseminated by EPA to assist other organizations in implementing environmental programs)

Note that QAPPs are required for the development or revision of models and software that support the generation, collection, evaluation, analysis, or use of data. (A model is set of equations and assumptions used to predict unknown data.) When existing models are used as a tool to generate or evaluate data, the project QAPP must describe the model and explain how it will be used and how its output will be evaluated to ensure the modeling effort meets the overall quality objectives for the project. Development or revision of new models also must be supported by a QAPP that describes the objectives for the model, the quality criteria that will be applied to the model, and the procedures for evaluating whether the model meets those criteria.

QA Project Plan Requirements

The Contractor has previously prepared a contract-wide Programmatic QAPP (PQAPP) for Contract EP-C-12-021. This PQAPP describes, in a single document, information that is not site or time-specific, but applies throughout the program (i.e., the duration of the contract). When tasked with preparing the PQAPP, the Contractor was informed that the PQAPP may need to be supplemented with project-specific details to support individual work assignments that involve the collection, generation, evaluation, analysis, or use of environmental data.

The activities in this work assignment involve gathering, evaluating, analyzing, and otherwise using existing environmental data (also known as “secondary” use of data. EPA has determined that the Contractor is operating under the existing PQAPP and that the PQAPP addresses QA requirements for a portion of this work assignment related to existing data collection, as well as the collection of data from the pilot testing of nutrient sensor equipment. The applicable sections of the PQAPP are sections 4, 5, 6, 7, 8, 9 and 10.

In support of this work assignment, the Contractor shall ensure that the work plan provides enough detail to clearly describe:

- Specific objectives of the project(s) supported by this work assignment, including typical questions that must be answered when collecting and analyzing existing pilot project data to support the development of a reasonably priced nutrient sensor.
- The type of data to be gathered or used under this work assignment to support the project objectives—including data from search engines, federal databases, EPA databases—as a well as a rationale for when those databases are appropriate and what data available in each will support the project
- The quality objectives needed to ensure the data will support the project objectives, and
- The QA/QC activities to be performed to ensure that any results obtained are documented and are of the type, quality, transparency, and reproducibility needed.

Additional QA Documentation Required

The EPA Quality Manual for Environmental Programs (CIO 2105-P-01-0, May 2000) requires published Agency reports containing environmental data to be accompanied by a readily identifiable section or appendix that discusses the quality of the data and any limitations on the use of the data with respect to their originally intended application. The EPA Quality Manual further requires Agency reports to be reviewed by the QA manager (or other authorized official) before publication to ensure that an adequate discussion of QA and QC activities is included. The purpose of the review is to ensure the reports provide enough information to enable a knowledgeable reader to determine if the technical and quality goals were met for the intended use of the data. Reports should include applicable statements regarding the use of any environmental data presented as a caution about possible misuse of the data for other purposes. For example, a Technical Support Document or Study Report must include a clear discussion of the quality management strategies (including the project goals and objectives, quality objectives and criteria, and QA/QC practices) that were employed to control and document the quality of data generated and used. These documents should also discuss any deviations from procedures documented in the EPA-approved QAPP(s) supporting the project, the reasons for those deviations, any impact of those deviations had on data quality, and steps taken to mitigate data quality issues.

In support of this Agency requirement, all major deliverables (e.g., Reports) produced by the Contractor under this work assignment must include a discussion of the QA/QC activities that were performed to support the deliverable, and this discussion must provide a sufficient level of detail to allow the EAD QA Coordinator (or designee) to determine if the QA/QC strategies implemented for the project sufficiently support the intended use of the data. Upon receipt, the WACOR will review

each applicable report and certify whether the Contractor has adhered to the QA requirements documented in the Contractor's PQAPP.

The Contractor also shall provide EPA with monthly reports of QA activities performed during implementation of this work assignment. These monthly QA reports shall identify QA activities performed to support implementation of this work assignment, problems encountered, deviations from the QAPP, and corrective actions taken. If desired, the Contractor may include this as a part of the contract-required monthly financial/technical progress report.

TASK 3 DELIVERABLES	DEADLINES
Monthly reports of QA work performed (may be included in the Contractor's monthly progress report)	Monthly

Task 3: Work Plan

The Contractor shall amend the existing Work Plan, as necessary, to incorporate the continuation of all duties as described in the Work Assignment. This includes, but is not limited to, participating and leading conference calls, scheduling webinar events and all related duties, providing technical and/or logistical support for workshop(s) and all related duties; and, other appropriate duties related to the pilot testing of nutrient sensors.

The following table contains the major deliverables and milestones under Task 3:

TASK	DELIVERABLE	DEADLINE
3.1 Prepare/Amend Work Plan	Prepare/Amend Work Plan, as needed	2-4 weeks of receiving the PWS
3.2 Schedule conference calls, webinars, workshops	On a schedule to be determined by EPA	TBD
3.3 Provide technical and logistical support	On a schedule to be determined by EPA	TBD

Task 4 – Communication Support

- A. The Contractor will initiate and/or continue conference calls with the Federal interagency work group(s) on the nutrient related challenge(s). The calls may vary in length, not to exceed one hour each, and the Contractor will prepare agendas, take notes and distribute the notes after the calls. The Contractor will supplement the work group with other non-Federal partners as needed to optimize the task(s) completion in consultation with the WACOR and the prize expert(s), where appropriate.
- B. The Contractor, with input from EPA, will prepare communication materials, content for Web sites, briefing papers, power point presentations, posters and other materials as requested for use

in the planning and completion of future nutrient and other challenge work as well as work in other related areas, as needed and as directed by the WACOR. Web site content development will include but is not limited to organizing and synthesizing content for EPA Web page on challenges, including information about challenge history, challenge development process, examples of challenges involving or relevant to EPA, challenge status and results, policies related to challenges, and resources for further information.

- C. The Contractor, with input from EPA, will perform additional tasks, including but not limited to, support for subsequent visioneering meetings, listening sessions, conferences., principal meetings, workshops, bi-weekly partner conference calls, weekly project team conference calls, videoconference events, webinars and in-person meetings.
- D. The Contractor, with input from EPA, will provide other communication strategy support including web input, development of presentations and fact sheets, outreach, marketing product input/development, publicity, and other technical, communications, and administrative support.
- E. The Contractor, with input from EPA, will provide support for the sensor challenge(s) and other efforts to stimulate development and marketing of affordable sensors for nutrients and other priority parameters. The Contractor support will include, but is not limited to, developing specific challenge elements, developing other mechanisms to accelerate sensor development, developing timeline(s), identifying/reviewing partners and partnerships to enlarge the effort, developing scoping documents and/or roll-out plans and materials for the challenge(s) or other tools to incentivize and accelerate sensor development; handling logistics of the roll-out plans, and, serving as a liaison with other partners as needed (Gulf of Mexico Alliance Coordination Team (ACT), the Hypoxia Task Force, Academia, Non-Government Organizations).

Task 5 – Workshop(s) and/or Webinar(s)

- A. At the direction of EPA, the Contractor will organize and execute webinars and/or workshops to accelerate the development and deployment of sensor technology.
- B. At the direction of EPA, the Contractor will organize and execute workshop(s) with the goal of identifying and summarizing needs and requirements for innovative water sensor and data management technologies for the monitoring and management of water quality in real-time, in order to inform short and long-term nutrient management planning. The Contractor will work with the WACOR to determine speakers and topics for all communication events. For all webinars, the Contractor will provide: (1) a draft agenda, (2) a list of participants, potential speakers, moderator, other key specific audience participants and participant categories (3) slides for the webinar (4) registration and operation of the webinar (5) notes summarizing discussion at the webinar(s).
- C. At the direction of EPA, the Contractor will organize and execute workshop and/or webinars to discuss key barriers and opportunities for various types of nutrient data and information under the Clean Water Act. Such workshop may include, but is not limited to: summarizing literature; developing a draft flow diagram of the existing processes, identifying points of the process presenting market challenges and impacting technology innovation and use; identifying

opportunities under EPAs purview that are important levers and have an impact on the market and subsequently the availability of data to better understand nutrient and other water quality problems facing the nation. The workshop would bring together EPA, states and partner organizations like WEF, ACWA and ASDWA to help inform how existing tools and processes can help to incentivize and mobilize the market for nutrient sensors, and how barriers might be addressed. For all workshops, the Contractor will:

- Identify select number of invited speaker presentations followed by questions/answer sessions.
- Construct and perform logistical tasks as required including, but not limited to, securing room blocks, constructing a registration website and all instructions, securing release forms for presentations, obtaining/organizing power point presentations, coordinating with audiovisual support personnel, managing/tracking overall timing and flow of the Workshop sessions; and arranging for flip charts, stick pins, markers, etc., as needed.
- Construct Workshop information packets and workshop materials, as needed.
- Provide broadcast via webinar or similar technology whereby interested parties can remotely participate (see/hear) to the presentations.
- Staff the registration table, providing participant name tags, information packets, and EPA handouts.
- Facilitate discussion, as needed, and will take notes during the workshop to inform the report after the meeting.
- Develop a report(s) summarizing the results and discussion so that participants can share and discuss.
- Post the presentations after the Workshop(s) and provide edited notes to EPA.

Task 6 – Pilot or Demonstration Project(s) and Watershed-Based Challenge

- A. At the direction of EPA, the Contractor will support the development and implementation of several pilot and/or demonstration projects and challenges. The pilot or demonstration projects will add a component to the nutrient sensor challenge whereby top performing sensors will be eligible for specific pilot or demonstration opportunities (e.g., edge of field, septic systems, and wastewater). The responsibilities will include, but are not limited to: identifying pilot opportunities, providing outreach, communication, logistical and organizational support, developing timelines, scheduling meetings, developing and designing marketing materials, preparing agendas, convening meetings, and preparing other project materials, preparing content for Web site(s), note-taking and video/photo documentation. In addition to the nutrient challenge, such pilot projects may be required to accelerate the development of other sensors. In addition, pilot support may include identifying, publicizing and handling logistics of awarding prizes to organizations that design effective and innovative piloting approaches for working with instruments developed by the top and honorable mention teams of the Nutrient Sensor Challenge.

The Contractor will provide other support at the direction of EPA including but not limited to providing communication and outreach support to the pilot teams; convening meetings, webinars, workshops, site visits, or other interaction deemed necessary between sensor developers, pilot project hosts, funders, and EPA; and developing timelines, guidelines, and other support materials as needed.

- B. At the direction of EPA, the Contractor will support the development and implementation of watershed-based and/or community-based challenge(s), where sensors are deployed to measure nutrients and other parameters and monitor the results of various nutrient (and other parameter) reduction activities. Such support may include but is not limited to strategic planning, outreach and communications, conducting meetings, workshops, focus groups, webinars or other convening mechanisms and associated planning and execution thereof; working closely with prize challenge experts and other organizations as EPA may require.

Deliverables and Schedule

1. The Contractor shall develop a new work plan within two weeks of receiving the PWS.
2. The Contractor shall participate in periodic conference calls to discuss progress and issues with the Workshop team(s).
3. The Contractor shall schedule webinar events, necessary web and phone capabilities; and any other duties as appropriate for webinar set-up.
4. The Contractor will record all webinars and host them on an internet with within 10 days of the webinar.
5. The Contractor will document all questions asked during webinars and/or workshops.
6. The Contractor shall provide a save the date email for webinars/workshops.
7. The Contractor shall set up webinar and/or workshop registration sites.
8. The Contractor shall provide draft workshop information packet 10 days prior to any workshop.
9. The Contractor shall provide a list of all webinar/workshop(s) registrants to WACOR within 10 days of conclusion of the event.
10. The Contract shall post available power point presentations with the approvals on a password protected ftp site within 10 working days of a webinar/workshop(s).
11. The Contractor shall provide notes taken during webinars/workshops within 10 working days of conclusion.

Travel will include:

The EPA anticipates the need for local and non-local travel by the Contractor employees and/or subcontractors to support the scope of work. The Contractor will provide specific travel details and costs in a request for travel approval submitted for WACOR review and CL-COR (PO) signature before each trip occurs (as specified by the contract per clause H.32).

Management Controls:

The Contractor shall contact the WACOR to present and discuss the work plan for this work assignment and/or amendment before it is approved by the EPA CO. The duration of this work assignment is from date of issuance through the end of the performance period (September 30, 2018).

EPA United States Environmental Protection Agency Washington, DC 20460 Work Assignment						Work Assignment Number 4-52			
						<input type="checkbox"/> Other <input type="checkbox"/> Amendment Number:			
Contract Number EP-C-12-021			Contract Period 09/26/2012 To 09/25/2017 Base Option Period Number 4			Title of Work Assignment/SF Site Name BASINS Support			
Contractor EASTERN RESEARCH GROUP, INC.				Specify Section and paragraph of Contract SOW See PWS					
Purpose: <input checked="" type="checkbox"/> Work Assignment <input type="checkbox"/> Work Assignment Close-Out <input type="checkbox"/> Work Assignment Amendment <input type="checkbox"/> Incremental Funding <input type="checkbox"/> Work Plan Approval						Period of Performance From 10/27/2016 To 09/25/2017			
Comments:									
<input type="checkbox"/> Superfund Accounting and Appropriations Data <input checked="" type="checkbox"/> Non-Superfund									
SFO <input type="checkbox"/> Note: To report additional accounting and appropriations date use EPA Form 1900-69A. (Max 2)									
Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars) (Cents)	Site/Project (Max 8)	Cost Org/Code
1									
2									
3									
4									
5									
Authorized Work Assignment Ceiling									
Contract Period:		Cost/Fee:		LOE:					
09/26/2012 To 09/25/2017									
This Action:									
Total:									
Work Plan / Cost Estimate Approvals									
Contractor WP Dated:				Cost/Fee		LOE:			
Cumulative Approved:				Cost/Fee		LOE:			
Work Assignment Manager Name Stephen Kraemer <div style="display: flex; justify-content: space-between; border-top: 1px solid black; margin-top: 10px;"> (Signature) (Date) </div>						Branch/Mail Code:			
						Phone Number: 706-355-8340			
						FAX Number:			
Project Officer Name Meghan Hessenauer <div style="display: flex; justify-content: space-between; border-top: 1px solid black; margin-top: 10px;"> (Signature) (Date) </div>						Branch/Mail Code:			
						Phone Number: 202-566-1040			
						FAX Number:			
Other Agency Official Name <div style="display: flex; justify-content: space-between; border-top: 1px solid black; margin-top: 10px;"> (Signature) (Date) </div>						Branch/Mail Code:			
						Phone Number:			
						FAX Number:			
Contracting Official Name Brad Heath <div style="display: flex; justify-content: space-between; border-top: 1px solid black; margin-top: 10px;"> (Signature) (Date) </div>						Branch/Mail Code:			
						Phone Number: 513-487-2352			
						FAX Number:			

**PERFORMANCE WORK STATEMENT
CONTRACT EP-C-12-021
WORK ASSIGNMENT 4-52**

TITLE: BASINS Support and Maintenance

WORK ASSIGNMENT CONTRACTING OFFICER'S REPRESENTATIVE (WACOR):

Stephen Kraemer
USEPA Southern California Field Office
600 Wilshire Blvd.
Mail Code: ORA-1
Los Angeles, CA 90017

Phone: 213-244-1854
E-mail: kraemer.stephen@epa.gov

PERIOD OF PERFORMANCE: October 27, 2016 through September 25, 2017

BACKGROUND

BASINS (Better Assessment Science Integrating point and Nonpoint Sources) is a desktop computer multipurpose environmental analysis system designed for regional, state, and local agencies that perform watershed and water quality-based studies. This system makes it possible to quickly assess large amounts of point and non-point source data in a format that is easy to use and understand. BASINS allows the user to assess water quality at selected stream sites or throughout an entire watershed. The tool integrates environmental data, analytical tools, and modeling programs to support cost-effective approaches to watershed management and environmental protection, including the development of Total Maximum Daily Loads (TMDLs). BASINS can be accessed at: <http://water.epa.gov/scitech/datait/models/basins/index.cfm>. Documentation of where BASINS data is hosted will be provided upon request.

PURPOSE

The purpose of this work assignment is to:

- Maintain BASINS by fixing program bugs and/or developing program enhancements to facilitate use.
- Provide basic support to the user community, primarily by responding to inquiries moderated through the listserv.

SPECIALIZED SKILLS

The Contractor shall provide experts who are experienced in using BASINS and have a thorough understanding of its operation and the models contained within the system. In particular expertise shall be available in the following:

Models: HSPF, DFLOW, SWAT, PLOAD, WASP, SWMM, and GWLF – expertise on model setup, calibration, data sources, and model output interpretation.

GIS: ArcView, ArcGIS, and MapWindow software; GIS data; DotSpatial; metadata and incorporation of user-supplied data.

Systems: Using BASINS and its components under Windows 7 and Windows 10 operating systems.

Utilities: WDM Utility, HSPFParm, HSPF Expert System, WinHSPF, Bacteria spreadsheet, Microbial Source Module, SDMPProjectBuilder, D4EM, GenScn, and PEST driver.

Programming: Object-oriented programming: Visual Basic, C+, C#, .NET, Active X, FORTRAN, and other languages.

TASKS

TASK 1 – Kick-off Meeting

Prior to beginning work on this Work Assignment, the EPA Work Assignment Contract Officer Representative (WACOR) shall schedule a “Kick Off” meeting with the Contractor. The agenda for this meeting will include the following items: (a) overview of the goals of the Work Assignment; (b) review and discussion of individual tasks; (c) roles and responsibilities of the WACOR, and of the Contractor; (c) any questions or concerns regarding QA/QC actions; (d) review the schedule of milestones and expectations; and (e) other items as requested either by the WACOR or the Contractor.

TASK 2: Develop Work Plan

The Contractor shall prepare a Work Plan in accordance with contract requirements. The Contractor shall also provide management and administrative support related to this work assignment, including the following:

- Perform financial oversight and prepare monthly progress reports to the WACOR. These progress reports shall include a detailed breakdown of costs and hours, a progress report on each task, problems encountered, including with quality assurance/quality control, and percent completion of the work. The monthly progress reports shall include a summary of all QA activities performed during the reporting period.
- Track progress toward completion of tasks against costs and LOE expended.
- Perform quality assurance checks of products produced in these tasks.
- Assist in resolving internal problems associated with completion of tasks or costs.

Should an issue arise, the Contractor shall contact the WACOR to inform of the problem and provide options for resolution. The Contractor shall provide follow up by email or phone until the issue is resolved.

The WACOR will review the draft Work Plan and provide the Contractor with written approval or comments. The Contractor shall provide a final Work Plan that responds to EPA's written comments within 5 business days.

Based on past experience with BASINS support and maintenance a level of effort ceiling is expected of 500 hours.

TASK 3: Quality Assurance / Quality Control

Quality Assurance (QA) is an important component of EPA's work to assure that minimum quality standards are attained. The contractor shall adhere to the Quality Management Plan (QMP) customized for this contract. The Contractor shall review and revise the existing Quality Assurance Project Plan (QAPP), if needed, to reflect the tasks in this Work Assignment and Quality Management Procedures corresponding to this contract. This will at minimum involve attaching the Work Plan as an appendix to the existing QAPP. The revised updated QAPP shall be provided to the WACOR within 10 business days of receiving the work assignment. The WACOR will review the draft QAPP and provide the Contractor with written approval or comments. The Contractor shall provide a final QAPP that responds to EPA's written comments within 5 business days.

The Contractor shall notify the WACOR at any time during the Work Assignment if changes to the QAPP are warranted (e.g., due to organizational changes, revised technical approaches or other unforeseen circumstance).

If, during the Period of Performance of this Work Assignment, the WACOR provides technical direction that revisions to the QAPP are determined to be necessary, the Contractor shall submit a revised QAPP, including the revision summary.

When preparing this "draft" revised version of the QAPP, the Contractor shall ensure that it is written in an active voice and shall include a "version history page" that summarizes changes made. The Contractor also shall provide the WACOR with copies of any modified SOPs or checklists.

TASK 4: BASINS Support and Maintenance

4.1 Provide Technical Support for BASINS

On occasion, requests on how to use BASINS for a particular application require a more in-depth response than that anticipated for routine technical support questions. In response to technical direction from the WACOR, the Contractor shall provide communication with instructions to BASINS users in utilizing a particular function of the BASINS system.

In providing support, the Contractor shall adhere to the following procedures:

- Requests for BASINS support will be issued via written technical direction from the WACOR, where the WACOR has decided the request requires the Contractor's efforts. Requests for support may arise from the BASINS Help email box, the BASINS listserv, or questions addressed individually to EPA staff.

- Contractor support will be supplied via phone, electronic mail, conference calls, or video calls. Contractor responses to questions posted on the BASINS Help email will send a copy back to the appropriate Help email for future reference. Responses by email will copy the WACOR.
- Requests for enhancement to the BASINS code or creation of custom BASINS data sets shall be sent to the WACOR for approval prior to initiation of any such work.
- The Contractor will inform the WACOR of the nature of the technical support provided, as well as the result.

4.2 Perform Model and Tool Updates, Enhancements and Bug Fixes

During the course of using the BASINS system, users will likely report program bugs and/or program enhancements that would facilitate use of the system. Under technical direction from the EPAWACOR, the Contractor will code bug fixes and/or program enhancements. The updated BASINS component will be tested internally by the Contractor, and then sent to the WACOR to verify that it fixes the problem. Finally, the Contractor shall provide the code update in the form of revised BASINS extensions or other appropriate code delivery package. The Contractor shall also provide a write-up detailing the problems addressed by the program update, and provide instructions to users on how to update their existing program to include the enhancements.

Whenever BASINS is updated, the Contractor shall conduct internal testing before sending to EPA for further testing. The contractor shall also modify existing documentation as needed. The Contractor shall provide EPA with a report that documents the Contractor's quality assurance tests and activities conducted for the development of the enhancements.

The following are the enhancements/updates already identified by EPA:

4.2.A: Download and prepare NHDPlus Version 2 data by HUC8 units

Currently BASINS is using NHDPlus Version 1 data which is available by HUC8 unit zip files. SDMPB and BASINS codes have been developed to consume NHDPlus version HUC8 zip files. The zip file contains selected layers and parameters. NHDPlus Version 2 data are available for download by only by HUC2 unit zip files. In order to consume NHDPlus version 2 data in SDMPB and BASINS without major changes to source codes we need to make the data available by HUC8 unit zip files containing layers and parameters contained in NHDPlus version 1 HUC8 unit zip files.

Deliverables:

1. A software utility/tool to automate downloading of NHDPlus Version 2 HUC 2 data file and processing the file to generate HUC8 unit zip files compatible with those available for NHDPlus version 1.
2. NHDPlus version 2 HUC8 unit zip files for all HUC8s available in NHDPlus version 2. EPA will upload the zip files to BASINS data download server.
3. Modified D4EM, SDMPB, and BASINS source codes to consume NHDPlus version 2 HUC8 unit zip files.

4.3 Create and/or Edit User Documentation

The contractor shall update the documentation of the BASINS system through the continued use of a hypertext document in the form of a compiled HTML help file.

In some cases the WACOR or Contractor will notice that a particular technical support question is routinely repeated. When this situation occurs, at the request of the WACOR through technical direction, the Contractor shall create a concise written summary of the problem and solution in question and answer format.

In response to technical direction from the WACOR, the Contractor shall also create technical documents for user requests requiring more in-depth responses. It is anticipated that these documents will be greater than two pages in length, contain tables, figures, and/or multi-media functions. Examples of technical notes are found on the BASINS web pages. Instructions through either documents or interactive communication may cover issues within the entire spectrum of BASINS use, such as model setup, calibration, process representation, report template development, review of models, and simulation of unusual or unique hydrologic and/or water quality conditions.

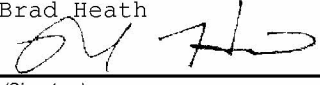
4.4 Support for BASINS web page

As enhancements are made to BASINS and EPA updates the web page accordingly, the Contractor shall review the web page to make sure that the changes are accurately reflected and that the software is provided in the proper format.

DELIVERABLE SCHEDULE

Task	Deliverable	Date
Task 1	Schedule kick-off meeting	Upon contract start date
Task 1	Hold kick-off meeting	Within 5 days of start date
Task 2,3	Draft QAPP	Within 10 days of receipt of the WA
Task 2,3	Work Plan, Final QAPP	In accordance with contract requirements
Task 4	Once technical direction is received and services are rendered, the Contractor shall provide an email describing the issue, support provided and results	Within 5 days after conclusion of each technical direction
Task 4	Develop and test code for bug fixes or enhancements	Within 30 days from technical direction
Task 4	Provide the code update in the form of revised BASINS extensions or other appropriate code delivery package	Within 15 days from technical direction
Task 4	Write-up detailing the problems addressed by the program update, and provide instructions to users on how to update their existing program to include the enhancements	Within 10 days from technical direction
Task 4	QA report(s)	Within 3 days of internal testing
	Progress Reports	Monthly throughout the performance period

EPA United States Environmental Protection Agency Washington, DC 20460 Work Assignment						Work Assignment Number 4-52			
						<input type="checkbox"/> Other <input type="checkbox"/> Amendment Number:			
Contract Number EP-C-12-021			Contract Period 09/26/2012 To 09/25/2017 Base Option Period Number 4			Title of Work Assignment/SF Site Name BASINS Modeling and Support			
Contractor EASTERN RESEARCH GROUP, INC.				Specify Section and paragraph of Contract SOW See PWS					
Purpose: <input checked="" type="checkbox"/> Work Assignment <input type="checkbox"/> Work Assignment Close-Out <input type="checkbox"/> Work Assignment Amendment <input type="checkbox"/> Incremental Funding <input checked="" type="checkbox"/> Work Plan Approval						Period of Performance From 10/27/2016 To 09/25/2017			
Comments:									
<input type="checkbox"/> Superfund Accounting and Appropriations Data <input checked="" type="checkbox"/> Non-Superfund									
SFO <input type="checkbox"/> Note: To report additional accounting and appropriations date use EPA Form 1900-69A. (Max 2)									
Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars) (Cents)	Site/Project (Max 8)	Cost Org/Code
1									
2									
3									
4									
5									
Authorized Work Assignment Ceiling									
Contract Period:		Cost/Fee: \$0.00		LOE: 0					
09/26/2012 To 09/25/2017									
This Action:		\$76,275.00		500					
Total:		\$76,275.00		500					
Work Plan / Cost Estimate Approvals									
Contractor WP Dated: 11/15/2016		Cost/Fee \$76,275.00		LOE: 500					
Cumulative Approved:		Cost/Fee \$76,275.00		LOE: 500					
Work Assignment Manager Name Stephen Kraemer <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="display: flex; justify-content: space-between;"> (Signature) (Date) </div>						Branch/Mail Code: Phone Number: 706-355-8340 FAX Number:			
Project Officer Name Meghan Hessenauer <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="display: flex; justify-content: space-between;"> (Signature) (Date) </div>						Branch/Mail Code: Phone Number: 202-566-1040 FAX Number:			
Other Agency Official Name <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="display: flex; justify-content: space-between;"> (Signature) (Date) </div>						Branch/Mail Code: Phone Number: FAX Number:			
Contracting Official Name Brad Heath <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="display: flex; justify-content: space-between;"> (Signature) (Date) </div>						Branch/Mail Code: Phone Number: 513-487-2352 FAX Number:			

EPA United States Environmental Protection Agency Washington, DC 20460 Work Assignment						Work Assignment Number 4-53				
						<input type="checkbox"/> Other <input type="checkbox"/> Amendment Number:				
Contract Number EP-C-12-021			Contract Period 09/26/2012 To 09/25/2017 Base Option Period Number 4			Title of Work Assignment/SF Site Name NPDES Vessel Reg Consideration				
Contractor EASTERN RESEARCH GROUP, INC.					Specify Section and paragraph of Contract SOW See PWS					
Purpose: <input checked="" type="checkbox"/> Work Assignment <input type="checkbox"/> Work Assignment Close-Out <input type="checkbox"/> Work Assignment Amendment <input type="checkbox"/> Incremental Funding <input type="checkbox"/> Work Plan Approval						Period of Performance From 09/26/2016 To 09/25/2017				
Comments: The contractor shall not commence work on this work assignment until September 26, 2016.										
<input type="checkbox"/> Superfund Accounting and Appropriations Data <input checked="" type="checkbox"/> Non-Superfund										
SFO <input type="checkbox"/> Note: To report additional accounting and appropriations date use EPA Form 1900-69A. (Max 2)										
Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code
1										
2										
3										
4										
5										
Authorized Work Assignment Ceiling										
Contract Period: Cost/Fee: LOE: 09/26/2012 To 09/25/2017										
This Action: <hr/>										
Total:										
Work Plan / Cost Estimate Approvals										
Contractor WP Dated: Cost/Fee LOE:										
Cumulative Approved: Cost/Fee LOE:										
Work Assignment Manager Name Jack Faulk <div style="display: flex; justify-content: space-between;"> <div>_____ (Signature)</div> <div>_____ (Date)</div> </div>							Branch/Mail Code: Phone Number: 202-564-0768 FAX Number:			
Project Officer Name Meghan Hessenauer <div style="display: flex; justify-content: space-between;"> <div>_____ (Signature)</div> <div>_____ (Date)</div> </div>							Branch/Mail Code: Phone Number: 202-566-1040 FAX Number:			
Other Agency Official Name <div style="display: flex; justify-content: space-between;"> <div>_____ (Signature)</div> <div>_____ (Date)</div> </div>							Branch/Mail Code: Phone Number: FAX Number:			
Contracting Official Name Brad Heath <div style="display: flex; justify-content: space-between;"> <div>  (Signature) </div> <div>9/22/2016 (Date)</div> </div>							Branch/Mail Code: Phone Number: 513-487-2352 FAX Number:			

**Performance Work Statement
Contract EP-C-12-021
Work Assignment 4-53**

Title: NPDES Vessel Regulatory Considerations

Work Assignment Contracting Officer Representative (WACOR):

Jack Faulk
USEPA Headquarters
William Jefferson Clinton Building
1200 Pennsylvania Avenue, N. W.
Mail Code: 4203M
Washington, DC 20460

Phone: 202-564-0768
Fax: 202-566-6392
E-Mail: faulk.jack@epa.gov

Period of Performance: September 26, 2016 through September 25, 2017

Estimated Level of Effort: 7,040 hours

Purpose and Background

The purpose of this work assignment is to support EPA's National Pollutant Discharge Elimination System (NPDES) vessel permitting program. Under this work assignment, the contractor shall provide technical support in EPA Office of Wastewater Management (OWM) Water Permits Division (WPD) to develop technical materials for EPA's use in implementing the vessel general permitting program. The support shall focus primarily on developing background and supporting information for EPA's vessel permitting program, conducting research for vessel related discharge issues, and developing and providing outreach to affected stakeholders. The contractor shall provide support to EPA with the following tasks:

- Develop a work plan and provide monthly progress reports;
 - Develop a Supplemental Quality Assurance Project Plan (SQAPP), to cover work activities under this work assignment;
 - Provide research and technical support for EPA's vessel permitting program, including development of technical development documents on specific topics (e.g., ballast water management);
 - Provide technical support implementing EPA's obligations as a result of the successful Endangered Species Act (ESA) consultation for the sVGP and VGP;
 - Support implementation of the VGP and sVGP and other vessel program outreach.
-

General Work Assignment Requirements (PWS Section 3.0)

Deliverable Formatting and Terminology

Throughout this work assignment, the contractor shall provide draft and final reports to EPA in electronic format, with hard copy format also provided when directed by the work assignment manager. The contractor shall discuss the computer file formats to be used for word processing, spreadsheet, database and graphics with the WACOR prior to file preparation. The WACOR will identify for the contractor which documents will be posted on EPA's Effluent Guidelines webpage. These documents posted to the Effluent Guidelines webpage must be Section 508 compliant.¹

Travel

Non-local travel by the contractor employees and/or subcontractors will be required to support the scope of this work assignment (e.g., participating in technical meetings and conferences). The contractor shall provide specific travel details and costs in a request for travel approval by the WACOR and the Contract Level Contracting Officer's Representative (CL-COR) before each trip occurs (as specified by the contract per clause H.32).

Event Expenses Not to Exceed \$20,000

No single event under this Work Assignment is anticipated to exceed \$20,000. The Contractor shall immediately notify the EPA Contracting Officer, CL-COR and WACOR of any anticipated event involving support for a meeting, conference, workshop, symposium, retreat, seminar or training that may potentially incur \$20,000 or more in cost during performance. Conference expenses are all direct and indirect costs paid by the government and include any associated authorized travel and per diem expenses, room charges for official business, audiovisual use, light refreshments, registration fees, ground transportation and other expenses as defined by the Federal Travel Regulations. All outlays for conference preparation should be included, but the federal employee time for conference preparation should not be included. After notifying EPA of the potential to reach this threshold, the Contractor shall not proceed with the task(s) until authorized to do so by the Contracting Officer.

Confidential Business Information

The contractor shall, at all times, adhere to Confidential Business Information (CBI) procedures when handling industry information. The contractor shall manage all reports, documents, and other materials and all draft documents developed under this work assignment in accordance with the procedures set forth in the "Security Plan for Handling Confidential Business Information Under the Clean Water Act" (September 2002) or its successor approved plans.

Identification as Contracting Staff

To avoid the perception that contractor personnel are EPA employees, contractor personnel shall be clearly identified as independent contractors of EPA when participating in events with outside parties and visiting field sites. When speaking with the public the contractor should refer all interpretations of policy to the WACOR.

Limitation of Contractor Activities

¹ See <http://www.epa.gov/epahome/accessibility.htm>.

The contractor shall submit drafts of all deliverables to the WACOR for review prior to submission of the final product. The contractor shall incorporate all WACOR comments into all final deliverables, unless otherwise agreed upon by the WACOR. The contractor will adhere to all applicable EPA management control procedures as implemented by the EPA Contracting Officer (CO), CL-COR, and WACOR.

Deliverable Due Dates

For the purpose of developing this work plan, the contractor shall assume the deliverable due dates in the tables for each task presented further. Major technical deliverables shall be subject to internal contractor peer review by an expert(s) not directly involved in the mainstream Work Assignment tasks. Deliverables will be prepared with proper adherence to EPA style and format requirements.

Tasks

Task 1: Program Management (PWS Section 3.0)

The contractor shall prepare and submit a detailed work plan that outlines the approach and methodology that shall be used to perform the tasks identified in this Work Assignment. The work plan shall specify the work to be done for each task, and the allocation of personnel, hours and budget by task and deliverables. The work plan shall be submitted to the CL-COR/WACOR in accordance with contract requirements.

This task also includes contract management such as communications between EPA Contracting Officer Representatives and their respective contractor counterparts. These communications would concern the progress made on the work assignment tasks and coordination of activities to facilitate optimal contractor performance.

The contractor shall provide electronic copies of the monthly progress reports to the WACOR and CL-COR. Each progress report shall describe the technical work and expenditures for the same time period as the corresponding invoice. The reports shall list by task the amount of work completed and include a table of hours by personnel for each task. The reports also shall identify any problems or difficulties. The contractor shall inform the EPA CO, CL-COR and WACOR in writing when 50%, 75%, and 90% of the allocated hours or dollars have been expended.

In addition, the contractor shall provide semi-annual accountability report(s) about how and whether the activities/reports performed under this work assignment have furthered EPA's goals toward protecting the Great Lakes from invasive species (e.g., a short description of how funds were used for each task for both this and previous contract periods, how much was spent on each subtask, and why the work is directly relevant to the goal of preventing the introduction of new invasive species to the Great Lakes and slowing their dispersal pathways in those water bodies).

TASK 1 DELIVERABLES	DEADLINES
Work Plan	In accordance with contract requirements
Progress Reports	Monthly

Great Lakes Accountability Report - 2	Semi-annually (March 31, 2017 and August 31, 2017)
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Task 2: Quality Assurance (PWS Section 3.1)

EPA policy requires that an approved Quality Assurance Project Plan (QAPP) or Programmatic Quality Assurance Project Plan (PQAPP) be in place for work that involves the collection, generation, evaluation, analysis or use of primary environmental data. The QAPP or PQAPP defines and documents how specific data generation and collection activities shall be planned, implemented, and assessed during a particular project. This contract has an approved PQAPP for all necessary work envisioned under this work assignment, with the exception of supplemental QA/QC information required to develop sampling and analysis plans (SAPs) for new data collection activities as described below.

Background

Quality Assurance Project Plans are required under the Agency's Quality Assurance Policy CIO-2105, formerly EPA Order 5360.1 A2 (May 2000), and implementing guidance CIO-2105-P-01-0 (May 2000). All projects that involve the generation, collection, analysis, and use of environmental data must have an approved Quality Assurance Project Plan (QAPP) in place prior to the commencement of the work. Examples of these environmental data operations are provided in **Table 2-1** below.

Table 2-1. Examples of work that involves the collection, generation, evaluation, analysis, or use of environmental data

Item	Examples
Data	Includes field sampling information (sample location information, flow measurements, temperature, pH, physical observations, etc.), laboratory measurements (e.g., chemical, physical, biological, radiological measurements), data collected from questionnaires, economic data, census data, and any other types of existing data (i.e., data generated for a different purpose or generated by a different organization)
Data generation	Includes field studies, laboratory studies, and generation of modeling output
Data collection	Includes field surveys, questionnaire surveys, literature searches, and third party data
Data evaluation	Includes data inspection, review, assessment, and validation
Data analysis	Includes statistical, engineering, and economic analysis, and testing, evaluation, and validation of methods and models; database creation, data extraction, and data manipulation
Data Use	Any use of data to support EPA decisions, regulations, policy, publications, or tools (including effluent guidelines, 304(m) program, standards, environmental assessments, and models, tools, or reports disseminated by EPA to assist other organizations in implementing environmental programs)

Note that QAPPs are required for the development or revision of models and software that support the generation, collection, evaluation, analysis, or use of data. (A model is set of equations and assumptions used to predict unknown data.) When existing models are used as a tool to generate or evaluate data, the project QAPP must describe the model and explain how it will be used and how its output will be evaluated to ensure the modeling effort meets the overall quality objectives for the project. Development or revision of new models also must be supported by a QAPP that describes the objectives for the model, the quality criteria that will be applied to the model, and the procedures for evaluating whether the model meets those criteria.

QA Project Plan Requirements

The Contractor has previously prepared a contract-wide Programmatic QAPP (PQAPP) for Contract EP-C-12-021. This PQAPP describes, in a single document, information that is not site or time-specific, but applies throughout the program (i.e., the duration of the contract). When tasked with preparing the PQAPP, the Contractor was informed that the PQAPP may need to be supplemented with project-specific details to support individual work assignments that involve the collection, generation, evaluation, analysis, or use of environmental data.

The activities in this work assignment involve gathering, evaluating, analyzing, and otherwise using existing environmental data (also known as “secondary” use of data). EPA has determined that the Contractor is operating under the existing PQAPP and that the PQAPP addresses QA requirements for a portion of this work assignment related to existing data collection, as well as future data secondary data collections necessary to perform work under this work assignment. The applicable sections of the PQAPP are sections 4, 5, 6, 7, 8, 9 and 10.

In support of this work assignment, the Contractor shall ensure that the work plan provides enough detail to clearly describe:

- Specific objectives of the project(s) supported by this work assignment, including typical questions that must be answered when collecting and analyzing existing data to support vessel discharge and management-related information collection and analysis efforts.
- The type of data to be gathered or used under this work assignment to support the project objectives—including data from search engines, federal databases, EPA databases—as a well as a rationale for when those databases are appropriate and what data available in each will support the project
- The quality objectives needed to ensure the data will support the project objectives, and
- The QA/QC activities to be performed to ensure that any results obtained are documented and are of the type, quality, transparency, and reproducibility needed.

Additional QA Documentation Required

The EPA Quality Manual for Environmental Programs (CIO 2105-P-01-0, May 2000) requires published Agency reports containing environmental data to be accompanied by a readily identifiable section or appendix that discusses the quality of the data and any limitations on the use of the data with respect to their originally intended application. The EPA Quality Manual further requires Agency reports to be reviewed by the QA manager (or other authorized official) before publication to ensure that an adequate discussion of QA and QC activities is included. The purpose of the review is to ensure the reports provide enough information to enable a knowledgeable reader to determine if the technical and quality goals were met for the intended

use of the data. Reports should include applicable statements regarding the use of any environmental data presented as a caution about possible misuse of the data for other purposes. For example, a Technical Support Document or Study Report must include a clear discussion of the quality management strategies (including the project goals and objectives, quality objectives and criteria, and QA/QC practices) that were employed to control and document the quality of data generated and used. These documents should also discuss any deviations from procedures documented in the EPA-approved QAPP(s) supporting the project, the reasons for those deviations, any impact of those deviations had on data quality, and steps taken to mitigate data quality issues.

In support of this Agency requirement, all major deliverables (e.g., Reports) produced by the Contractor under this work assignment must include a discussion of the QA/QC activities that were performed to support the deliverable, and this discussion must provide a sufficient level of detail to allow the EAD QA Coordinator (or designee) to determine if the QA/QC strategies implemented for the project sufficiently support the intended use of the data. Upon receipt, the WACOR will review each applicable report and certify whether the Contractor has adhered to the QA requirements documented in the Contractor's PQAPP.

The Contractor also shall provide EPA with monthly reports of QA activities performed during implementation of this work assignment. These monthly QA reports shall identify QA activities performed to support implementation of this work assignment, problems encountered, deviations from the QAPP, and corrective actions taken. If desired, the Contractor may include this as a part of the contract-required monthly financial/technical progress report.

TASK 2 DELIVERABLES	DEADLINES
Monthly reports of QA work performed (may be included in the Contractor's monthly progress report)	Monthly

Task 3: Ballast Water Management Evaluation (PWS Sections 3.2, 3.5, 3.6, and 3.7)

Managing the discharge of ballast water is a critical component of aquatic nuisance species control. This task includes preparation of a technical development document, started under a previous work assignment (#3-53), assessing the state of ballast water management systems for vessels that transit into freshwater as well as marine ecosystems, including options available for both existing and new vessels. This assessment will investigate the full range of ballast water management system (BWMS) options, including activities such as best management practices, ballast water exchange, and treatment. Both on-ship and off-ship (e.g., on-shore) ballast water treatment systems options will be considered for the full range of domestic and international vessels covered under EPA's Vessel General Permit (VGP) as well as vessels less than 79 feet in length that may otherwise be covered under EPA's Small Vessel General Permit (sVGP). The report will provide BWMS options for both inland and marine vessels, including vessel activities in the Great Lakes (i.e., pre- and post-2009 Lakers and other vessels traversing the Great Lakes). The assessment will consider biological effectiveness, cost, logistics, operations, regulatory implications, safety, and any other areas that may affect ballast water management, including challenges presented by freshwater ecosystems. The assessment will look at both shipboard

treatment and off-ship reception facilities to determine the availability and economic and logistical feasibility of these two options for the treatment of ballast water from the different categories/classes of vessels. Specifically, this assessment will consider if onshore treatment or other off-ship treatment, such as on a treatment barge, are reasonable, or preferred, alternatives to shipboard treatment for any universe of vessels covered under the VGP, including an assessment of the time necessary to implement such an approach if such is found to be a reasonable alternative. Unique characteristics of classes/categories of vessels will be considered in context with BWMS options to determine whether specific management/treatment options are “available” for these vessels considering the unique operational and design constraints of such vessels (e.g., large volumes of fresh cold water required and the short duration of trips for Lakers). This assessment will also evaluate Lakers built after 2009 since these vessels face many of the same challenges and constraints as pre-2009 Lakers. As appropriate, this assessment will evaluate a variety of environmental (e.g., temperature and salinity), operational (e.g., ballasting flow rates and holding times), and vessel design (e.g., ballast volume and unmanned barges) parameters to consider in determining applicable discharge requirements.

Tentative Ballast Water Management Technical Development Document Outline

1. Introduction
2. Ballast Water Regulations/Requirements to Prevent ANS Introduction and Propagation
3. Ballast Water Management Considerations
4. Vessel Universe
5. Best Management Practices
6. Ballast Water Treatment Principals
7. Commercially Available Ballast Water Treatment Systems
8. Ballast Water Management System Performance
9. Ballast Water Management System Costs
10. Compliance Monitoring
11. Off-ship Ballast Water Treatment
12. Ballast Water Alternatives
13. References

Some smaller vessels, because of their unique designs and operations might be able to use onboard potable water for ballasting. This is particularly true for vessels that use ballast to compensate for fuel burn-off and sewage generation. Protecting the Great Lakes from the introduction of new invasive species is one of the priorities of EPA and the Federal Government and potential applications of this technology to that end is also a goal of this task. Under a previous work assignment (#2-53 and #3-53), the Contractor developed a report (Feasibility and Efficacy of Using Potable Water Generators as an Alternative Option for Meeting Ballast Discharge Limits, EPA 830-R-15-002, July, 2015) evaluating whether such systems can be used as an effective form of ballast water management for these vessels, and if so, whether they are environmentally effective. The contractor shall support EPA’s dissemination of the findings of this report as a way to further gauge the feasibility of implementing such technologies for the control of ballast water discharges through outreach such as journal articles, fact sheet, etc.

Task 3 - Deliverables:

Deliverable	Deadline
Journal article(s), as requested by WACOR	According to a schedule developed by ERG and approved by the WACOR
Fact Sheet and other outreach materials	<ul style="list-style-type: none"> - Draft within 30 days of WACOR request - Revisions within 10 days after receipt of comments from WACOR
Preliminary BWTS Technical Development Document	Draft – March 31, 2017, unless specified otherwise by the WACOR through technical direction
Revised BWTS Technical Development Document	Revisions within 1 month after receipt of comments from WACOR unless specified otherwise through technical direction

Task 4: Evaluate Vessel Best Management Practice Efficacy (PWS Sections 3.2, 3.5, and 3.6)

In a previous work assignment (#3-53), the contractor completed a report entitled: “Analysis of Ballast Water Discharges into the Great Lakes from Overseas Vessels from 2010 to 2013” which provides information on ballast water discharges from ocean-going vessels entering the Great Lakes. Information in that report is useful to assess aquatic nuisance species invasion risks into the Great Lakes by these vessels. Following up on that report, the contractor initiated an evaluation of the availability of data on the movement of vessels within the Great Lakes as well as vessels arriving to the Great Lakes from other U.S. coastal and fresh water ports, and the associated uptake and discharge of ballast water. Based on the availability of data, the contractor will prepare report(s) that summarizes vessel routes entering the Great Lakes Basin, as well as routes within the lakes and originating from other fresh water ports, including vessel type (e.g., commercial, recreational) and possible vectors (e.g., hull fouling, ballast water, recreational boat trailer). The report will also include information on the ranges and populations of ANS currently inhabiting the Great Lakes. The contractor shall aim to identify the highest risk routes and vessels/vector combinations. This report shall also identify a number of aquatic nuisance species (ANS), as agreed to with the WACOR, that will be used for a qualitative discussion of high risk vectors (e.g., ballast water from Lakers, recreational vessels, and fishing vessels, etc.) in the Great Lakes.

Based on the findings of the effort identified above, the Contractor may be requested to develop a suite of strategies or tools to address inter-lake transfer of ANS.

Task 4 - Deliverables:

Deliverable	Deadline
Phase I Great Lakes Inter-Lake Transfer Report	<ul style="list-style-type: none"> - Draft report within 4 months after EPA acceptance of final outline - Revisions within 1 month after receipt of comments from WACOR

Follow-up Great Lakes Inter-Lake Transfer Report (Strategies and Tools)	- As specified in technical direction from the WACOR based on findings from Phase I Report
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Task 5: Provide Technical and Implementation Support to EPA’s Vessel General Permitting Program (PWS Sections 3.2, 3.5, 3.6, and 3.7)

The Contractor shall support EPA’s development of technical and factual materials for EPA use in implementing its Vessel General Permitting Program, including work on both the VGP and sVGP, as appropriate. Work may include supporting the development of draft permit language and rationale (including both effluent limitations and other permit requirements) and other permit related background information.

The contractor shall perform literature reviews, develop background materials, research technologies, and work with industry experts and government officials to develop a solid foundation for instituting national permit effluent limits and other conditions. The contractor may be asked to update existing technical development documents (TDDs) and produce or finalize up to 2 additional TDDs, in addition to the TDD identified in Task 3. EPA expects these efforts to include technical memoranda (plus appendices with relevant data) describing the sources of information, key findings from those sources, technological capabilities and efficacy, cost information where relevant, and what conclusions, if any, can be drawn from this information. Once final, these TDDs shall be of sufficient quality to place in the docket and serve as part of the administrative record for decision-making. Subject areas which may be researched include, but will not be limited to:

1. Advances in anti-foulant hull coating technologies/and pollution and invasive species control options
2. Evaluations of information submitted as part of EPA’s monitoring requirements
3. Monitoring approaches to assess vessel discharges
4. Status on the availability and technical feasibility of using environmental acceptable lubricants on vessels, including the extent to which vessels have converted to these applications as a result of VGP/sVGP requirements.
5. Other discharge types and treatment options as necessary.

In addition, upon receiving written direction from the WACOR, the contractor shall assist EPA in the issuance/modification of the VGP or sVGP. This may include assembling key background information, providing docket support, and assisting in preparation of briefing materials. Contractor support for permit development may include activities such as an assessment of existing permit requirements; preparation of technical memoranda, background information, and briefing materials; and docket compilation.

The contractor shall also support EPA in the reissuance of the next VGP, including collecting and compiling information and developing analyses, studies, and other supporting documentation; assisting with formatting the permit, fact sheet, and other permit documents for general consistency; assisting with the ESA consultation; conducting a cost analysis for the permit requirements and development of a comment response database and assisting with the

comment response categorization and response document. In addition, the contractor shall provide support to EPA in developing outreach strategies and materials to improve compliance.

The contractor shall also develop an economic and benefits analysis to examine the market and non-market impacts to society from EPA's issuance of vessel general permits. This work will build off of the existing analyses prepared for the 2013 VGP and 2014 taking into account any revisions to these permits as well as any changes in other considerations that affect such analysis.

Task 5 - Deliverables:

Deliverable	Deadline
Technical Development Document	Based on technical direction from the WACOR
Briefing Materials	Based on technical direction from the WACOR
Targeted Assessment of Permit Conditions	Based on technical direction from the WACOR
Economic and Benefits Analysis	Based on technical direction from the WACOR
Technical Memorandum and Background Information	Based on technical direction from the WACOR
Permit Docket Support, including Comment Response	Based on technical direction from the WACOR

Task 6: Provide Technical Support Implementing EPA's Obligations as a Result of the Successful Endangered Species Act (ESA) Consultation for the sVGP and the VGP (PWS Sections 3.2, 3.6, and 3.7)

On November 28 and 29, 2012, EPA successfully concluded formal consultation with NOAA Fisheries and the Fish and Wildlife Service (i.e., the Services) on the VGP and sVGP. As a result of that consultation, EPA agreed to some follow-up implementation activities as described in the Services Biological Opinion recommendations. These activities include preparing a monitoring plan, periodically analyzing and compiling data on vessel discharges as identified in that plan, and periodically reviewing whether there have been new aquatic nuisance species introductions into U.S. waters.

EPA, in consultation with the Services, developed the monitoring plan (with the current working draft dated December 2014) for how to approach the analyses of the vessel discharge data. The contractor may be asked to support modification or finalization of that plan to better characterize vessel discharges and activities that may affect listed species and/or critical habitat.

Also, the contractor shall support analyzing vessel data, specified invasive species databases, and other data sources as applicable to provide information to the EPA consistent with the latest version of the monitoring plan. The monitoring data report will provide a summary of available VGP monitoring data and an assessment of the potential impacts to listed species from specific vessel waste streams in the different regions of the United States, including the Great Lakes and other freshwater ecosystems.

Task 6 - Deliverables:

Deliverable	Deadline
Revise Endangered Species Monitoring Plan	Draft within 1 month of technical direction from WACOR and any revisions within 2 weeks of receipt of comments from WACOR.
Endangered Species Monitoring Data Analysis Report Outline	Based on technical direction from the WACOR.
Endangered Species Monitoring Data Analysis Report	1 month after receipt of comments from WACOR unless otherwise specified through technical direction.
Aquatic Nuisance Species Analysis	Based on technical direction from the WACOR.

Task 7: Ballast Water Treatment System Sensor Inventory and “Next Generation” Ballast Water Monitoring

Ballast water treatment sensor and next generation ballast water monitoring work, performed under Task 7 on the previous work assignment (i.e., WA 3-53), will now be performed under Task 3 for this work assignment.

Task 8: Outreach (PWS Section 3.7)

The Contractor shall support EPA with the development of materials for implementation and outreach associated with the control of discharges from vessels. The contractor shall prepare technical materials such as 1-2 page factsheets and power point presentations on permit conditions, internal as well as external stakeholder meetings, or briefings for senior management. Contractor shall assume up to 5 short implementation fact sheets and implementation checklists. Some of those fact sheets may need to be translated into languages of the IMO (French, Spanish, Chinese, Russian, and/or Arabic). The contractor shall also support up to 3 online webinars as requested by the WACOR.

The Contractor shall develop a report that summarizes the characteristics and conditions of vessels and vessel practices that could enter freshwater and other ecosystems based on, among other sources, information (i.e., from Notices of Intent, Notices of Termination, Vessel One-Time Reports, and Annual Reports) submitted to EPA under both the 2008 and 2013 VGPs. The report will also analyze vessels and vessel activities based on location to the extent possible, such as to identify the types of vessels operating on the Great Lakes and their operational and discharge characteristics.

Task 8 - Deliverables:

Deliverable	Deadline
Briefing Materials	Based on technical direction from the WACOR
Online Meeting/Webinar Support	<ul style="list-style-type: none"> - Registration pages within 2 weeks after technical direction from WACOR. - Summary reports within 2 weeks after completion of meeting/webinar.

Technical Memorandum and Background Information	Based on technical direction from the WACOR
Brochures, Fact Sheets, Other Outreach Materials	Based on technical direction from the WACOR
Draft VGP Summary Report Outline	Based on technical direction from the WACOR
Revised VGP Summary Report Outline	1 week after receipt of comments on Draft Report Outline from WACOR
Draft VGP Summary Report	2 months after EPA acceptance of Final Revised VGP Summary Report Outline
Revised VGP Summary Report	2 weeks after receipt of comments from EPA

CHECKLIST-- Justification for Use of an Existing PQAPP for the Quality Documentation for Projects that Rely on Existing Data

QAPP Element	Sufficiently Addressed in PQAPP	Not Applicable to Project	Explanatory Comments
A1. Title & Approval Sheet			
Project title	X		
Organization's name	X		
Effective date and/or version identifier	X		
Dated signature of Organization's project manager	X		
Dated signature of Organization's QA manager	X		
Other signatures, as needed (e.g., EAD Project Officer, EAD QA Coordinator)	X		
Revision History	X		
A2. Table of Contents			
Includes sections, figures, tables, references, and appendices	X		
Document control information indicated (when required by the EPA Project Manager and QA Manager)	X		
A3. Distribution List			
Includes all individuals who are to implement or otherwise receive the QAPP and identifies their organization	X		
A4. Project/Task Organization			
Identifies key individuals with their responsibilities (e.g., data users, decision makers, project QA manager, Subcontractors, etc.) and contact info.	X		
Organization chart shows lines of authority & reporting responsibilities	X		
Project QA manager position indicates independence from unit collecting/using data	X		
A5. Problem Definition/Background			
Clearly states problem to be resolved, decision to be made, or hypothesis to be tested	X		
Identifies project objectives or goals	X		
Historical & background information	X		
Cites applicable technical, regulatory, or program-specific quality standards, criteria, or objectives	X		
A6. Project/Task Description			
List measurements to be made/data to obtain	X		
Notes special personnel or equipment requirements	X		
Provides work schedule	X		
A7. Overall Quality Objectives & Criteria			
States overall quality objectives and limits needed to support the project goals and objectives cited in A5	X		

QAPP Element	Sufficiently Addressed in PQAPP	Not Applicable to Project	Explanatory Comments
A8. Special Training Requirements/ Certifications			
Identifies specialized skills, training or certification requirements	X		
Discusses how this training will be provided/the necessary skills will be assured and documented	X		
A9. Project-level Documents & Records			
Describes process for distributing the approved QAPP and other planning documents (and updates) to staff	X		
Identifies final work products that will result from the project	X		
Describes the process for developing, reviewing, approving, and disseminating the final work products and individuals responsible for these processes	X		
B1. Data Needs			
Detailed list/description of the specific data elements needed to support project goals	X		
Description of the scope of the data elements that you need (e.g., data supporting specific treatment options vs. the full range of options, data supporting the entire country vs. a specific geographic region)	X		
If project includes development or update of a project database, QAPP identifies and defines each database field	X		
B2. Potential Data Sources			
Identifies and describes potential sources of the existing data needed (e.g., photographs, topographical maps, facility or state files, census data, meteorological data, publications, etc.) and the rationale for their use	X		
If literature searches are used, describes the search engines that will be used and key search terms	X		
If databases or models will be used, describe the database (or model) in terms of who developed it and operates it and the type of data it contains	X		
For other potential sources, describe the potential sources & rationale for considering or using each one	X		

QAPP Element	Sufficiently Addressed in PQAPP	Not Applicable to Project	Explanatory Comments
B3. Criteria for Selecting Data Sources			
Identifies each criterion that will be used to determine if the candidate data sources listed in B2 will meet your needs, and how each criterion is defined. (Criteria vary by project; examples include reliability, age, applicability, quantity, format, and others)	X		
Explains rating system used to evaluate source against each criterion	X		
B4. Data Value Selection Approach			
For data sources that meet the criteria identified in B3: Describes the criteria and procedures that will be used to determine which value(s) identified in the acceptable sources are most appropriate for use in the project	X		
For data that do not meet these pre-established criteria but are the only data available, explains how the decision to use such data will be made and documented	X		
B5. Resolving Data Gaps			
Describes the process for identifying and addressing data gaps that still exist after candidate data sources have been evaluated and appropriate data values have been identified	X		
Describes the process that will be used to address any new data needs revealed during the data gathering process (i.e., additional data elements not previously considered)	X		
B6. Data Gathering Documentation and Records			
Describes how results of the source selection and the data value selection will be documented, including any sources or values that were rejected and the rationale for not using them	X		
For data that are deemed acceptable and that will be used, explains how each data element will be associated to its original source citation (i.e., bibliographic information, telephone contact reports, email messages, etc.)	X		
C1. Standardization of Data Elements			
Describes the process to ensure that units and other key measures are captured and standardized (or otherwise made comparable) in the database	X		

QAPP Element	Sufficiently Addressed in PQAPP	Not Applicable to Project	Explanatory Comments
If the project requires that all fields be standardized to a single set of units (e.g., US dollars for economic data, µg/L for chemical data), identifies the standard units that will be required for each data element	X		
Identifies the procedures for converting data reported in other units to the standardized units, including any rounding or truncating procedures, and procedures for ensuring these conversions are performed correctly	X		
If standardization of data elements is not needed, explains the process for ensuring that data presented in varying units are comparable enough for use in the project and that project staff members and other data users will be able to readily identify differences in units	X		
C2. Data Entry			
Explains the process for manually entering selected data into the project database, who will be responsible for such data entry, and the QC strategies that will be used to ensure that the database accurately and completely captures the data as presented in the original source	X		
C3. Merging or Uploading Electronic Data from Existing Sources			
If data are available electronically and will be uploaded or merged into the project database: describes the procedures that will be followed to ensure that errors are not introduced during the upload/merge process and that the final database reflects the original dataset(s)	X		
C4. Data Review			
Describes the process for ensuring that the data have been recorded, transmitted, and processed correctly	X		
C5. Data Storage and Manipulation			
Describes how the existing data will be stored	X		
Describes who will be responsible for access to and maintenance of the stored data	X		
Describes how the existing data will be incorporated with other project data to support the project goal/decision to be made	X		

QAPP Element	Sufficiently Addressed in PQAPP	Not Applicable to Project	Explanatory Comments
Describes the QC strategies that will be employed to ensure that the integrity of the data is not compromised during data storage, access/retrieval, updates, or other manipulation	X		
D1. Data Quality Verification and Data Quality Reporting			
Describes the process for verifying that the final set of data meets the overall criteria originally specified for the project	X		
Describes how these determinations will be documented and reported	X		
For data that don't meet the pre-established specifications, explains the process for determining if they are usable and how such decisions will be documented	X		
D2. Use/Analysis of the Existing Data			
Provides details regarding the exact means in which the data will be used to meet project objectives	X		
Includes an explanation or list of the information to be calculated and the data elements that will be used to make those calculations	X		
Includes applicable calculations and equations (if known) or explanations of how they will be developed	X		
Includes plans for excluding outliers			
D3. Methodology Documentation and Conceptual Review			
If exact methodologies for analyzing the data will need to be developed or modified during the course of data analysis, explains the process by which such methodologies will be documented, who is responsible for reviewing/ approving their use, and how the methodologies will be checked to ensure they yield the desired products	X		
D4. Technical Review of the Data Analysis			
Describes activities that will be used to ensure the data analyses are being implemented as specified and will support project objectives	X		
Explains procedures for identifying and notifying appropriate personnel if changes to the originally planned procedures are warranted, and the process for approving, documenting and implementing such changes	X		

QAPP Element	Sufficiently Addressed in PQAPP	Not Applicable to Project	Explanatory Comments
D5. Final Verification of Data Analysis and Reconciliation with User Requirements			
Describes the process for reviewing the final work product to ensure that the work was generated in accordance with the QAPP, and that the work product addresses the overall project goals and objectives	X		
Describes how the results of this assessment will be documented	X		
Describes how any limitations of the data or data analyses that were used to prepare the final work product will be documented and communicated	X		

Work Assignment Form. (WebForms v1.0)

Work Assignment Form. (WebForms v1.0)

**Performance Work Statement
Contract EP-C-12-021
Work Assignment 4-54**

Title: Detailed Study and ELG Development for CWT Industry

Work Assignment CO's Representative (WACOR):

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Alternate Work Assignment CO's Representative (AWACOR):

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Period of Performance: September 29, 2016 through September 25, 2017

Purpose and Background

The purpose of this work assignment is to support completion of EPA's detailed study of the centralized waste treatment (CTW) point source category, specifically facilities that manage wastewater from oil and gas extraction activities. In addition, this work assignment will support preliminary work on development of new or revised effluent guidelines for the CWT point source category if EPA chooses to initiate a rulemaking.

EPA currently regulates discharges from the CWT category pursuant to effluent limitations guidelines and standards (collectively referred to as ELGs) found at 40 CFR Part 437. Some of these facilities accept wastewaters from oil and gas extraction activities. However, the treatment

technologies used by some CWT facilities are not amenable to treatment of pollutants that may be found in oil and gas wastewaters, such as total dissolved solids (TDS) and radioactivity.

EPA has been conducting a detailed study to evaluate management of these wastewaters. EPA has conducted a number of activities under previous work assignments (WA 2-54 and 3-54). This work assignment provides support to finalize the detailed study. This work assignment also provides support to conduct preliminary investigations to develop or revise effluent limitations guidelines and pretreatment standards (ELG) regulations for facilities that accept oil and gas extraction wastewater. Tasks to support a rulemaking will be initiated only through technical direction. This support includes preliminary activities such as researching facilities, evaluating cost and performance of treatment technologies, developing questions for surveys, and developing reports and other documentation.

VII. General Work Assignment Requirements (PWS Section 3.0)

Deliverable Formatting and Terminology

Throughout this work assignment, the contractor shall provide draft and final reports to EPA in electronic format, with hard copy format also provided when directed by the work assignment manager. The contractor shall discuss the computer file formats to be used for word processing, spreadsheet, database and graphics with the WACOR prior to file preparation. The WACOR will identify for the contractor which documents will be posted on EPA's Effluent Guidelines webpage. These documents posted to the Effluent Guidelines webpage must be Section 508 compliant.¹

Travel

Example: Non-local travel by the contractor employees and/or subcontractors will be required to support the scope of this work assignment (e.g., conducting site visits and sampling). The contractor shall provide specific travel details and costs in a request for travel approval by the WACOR and the Contract Level Contracting Officer's Representative (CL-COR) before each trip occurs (as specified by the contract per clause H.32).

Event Expenses Not to Exceed \$20,000

No single event under this Work Assignment is anticipated to exceed \$20,000. The Contractor shall immediately notify the Contracting Officer (CO), CL-COR and WACOR of any anticipated event involving support for a meeting, conference, workshop, symposium, retreat, seminar or training that may potentially incur \$20,000 or more in cost during performance. Conference expenses are all direct and indirect costs paid by the government and include any associated authorized travel and per diem expenses, room charges for official business, audiovisual use, light refreshments, registration fees, ground transportation and other expenses as defined by the Federal Travel Regulations. All outlays for conference preparation should be included, but the federal employee time for conference preparation should not be included. After notifying EPA of the potential to reach this threshold, the Contractor shall not proceed with the task(s) until authorized to do so by the CO.

¹ See <http://www.epa.gov/epahome/accessibility.htm>.

Confidential Business Information

The contractor shall, at all times, adhere to Confidential Business Information (CBI) procedures when handling industry information. The contractor shall manage all reports, documents, and other materials and all draft documents developed under this work assignment in accordance with the procedures set forth in the “Security Plan for Handling Confidential Business Information Under the Clean Water Act” (September 2002) or its successor approved plans.

Identification as Contracting Staff

To avoid the perception that contractor personnel are EPA employees, contractor personnel shall be clearly identified as independent contractors of EPA when participating in events with outside parties and visiting field sites. When speaking with the public the contractor should refer all interpretations of policy to the WACOR.

Limitation of Contractor Activities

The contractor shall submit drafts of all deliverables to the WACOR for review prior to submission of the final product. The contractor shall incorporate all WACOR comments into all final deliverables, unless otherwise agreed upon by the WACOR. The contractor will adhere to all applicable EPA management control procedures as implemented by the CO, CL-COR and WACOR.

Deliverable Due Dates

For the purpose of developing this work plan, the contractor shall assume the deliverable due dates in the tables for each task presented further. Major technical deliverables shall be subject to internal contractor peer review by an expert(s) not directly involved in the mainstream Work Assignment tasks. Deliverables will be prepared with proper adherence to EPA style and format requirements.

Tasks

Task 1: Program Management

The contractor shall prepare and submit a detailed work plan that outlines the approach and methodology that shall be used to perform the tasks identified in this Work Assignment. The work plan shall specify the work to be done for each task, and the allocation of personnel, hours and budget by task and deliverables. The work plan shall be submitted to the CL-COR/WACOR in accordance with contract requirements.

This task also includes contract management such as communications between EPA CO Representatives and their respective contractor counterparts. These communications would concern the progress made on the work assignment tasks and coordination of activities to facilitate optimal contractor performance.

The contractor shall provide electronic copies of the monthly progress reports to the WACOR and CL-COR. Each progress report shall describe the technical work and expenditures for the same time period as the corresponding invoice. The reports shall list by task the amount of work completed and include a table of hours by personnel for each task. The reports also shall identify any problems or difficulties. The contractor shall inform the CO, CL-COR and WACOR in writing when 50%, 75%, and 90% of the allocated hours or dollars have been expended.

TASK 1 DELIVERABLES	DEADLINES
Work Plan	In accordance with contract requirements
Progress Reports	monthly

Task 2: Quality Assurance

EPA policy requires that an approved Quality Assurance Project Plan (QAPP) or Programmatic Quality Assurance Project Plan (PQAPP) be in place for work that involves the collection, generation, evaluation, analysis or use of primary environmental data. The QAPP or PQAPP defines and documents how specific data generation and collection activities shall be planned, implemented, and assessed during a particular project. This contract has an approved PQAPP for all necessary work envisioned under this work assignment. In addition, this work assignment has an approved SQAPP for sampling and analysis plans (SAPs) for new data collection activities.

Background

Quality Assurance Project Plans are required under the Agency's Quality Assurance Policy CIO-2105, formerly EPA Order 5360.1 A2 (May 2000), and implementing guidance CIO-2105-P-01-0 (May 2000). All projects that involve the generation, collection, analysis, and use of environmental data must have an approved Quality Assurance Project Plan (QAPP) in place prior to the commencement of the work. Examples of these environmental data operations are provided in **Table 2-1** below.

Table 2-1. Examples of work that involves the collection, generation, evaluation, analysis, or use of environmental data

Item	Examples
Data	Includes field sampling information (sample location information, flow measurements, temperature, pH, physical observations, etc.), laboratory measurements (e.g., chemical, physical, biological, radiological measurements), data collected from questionnaires, economic data, census data, and any other types of existing data (i.e., data generated for a different purpose or generated by a different organization)
Data generation	Includes field studies, laboratory studies, and generation of modeling output
Data collection	Includes field surveys, questionnaire surveys, literature searches, and third party data
Data evaluation	Includes data inspection, review, assessment, and validation

Table 2-1. Examples of work that involves the collection, generation, evaluation, analysis, or use of environmental data

Item	Examples
Data analysis	Includes statistical, engineering, and economic analysis, and testing, evaluation, and validation of methods and models; database creation, data extraction, and data manipulation
Data Use	Any use of data to support EPA decisions, regulations, policy, publications, or tools (including effluent guidelines, 304(m) program, standards, environmental assessments, and models, tools, or reports disseminated by EPA to assist other organizations in implementing environmental programs)

Note that QAPPs are required for the development or revision of models and software that support the generation, collection, evaluation, analysis, or use of data. (A model is set of equations and assumptions used to predict unknown data.) When existing models are used as a tool to generate or evaluate data, the project QAPP must describe the model and explain how it will be used and how its output will be evaluated to ensure the modeling effort meets the overall quality objectives for the project. Development or revision of new models also must be supported by a QAPP that describes the objectives for the model, the quality criteria that will be applied to the model, and the procedures for evaluating whether the model meets those criteria.

QA Project Plan Requirements

The Contractor has previously prepared a contract-wide Programmatic QAPP (PQAPP) for Contract EP-C-12-021. This PQAPP describes, in a single document, information that is not site or time-specific, but applies throughout the program (i.e., the duration of the contract). When tasked with preparing the PQAPP, the Contractor was informed that the PQAPP may need to be supplemented with project-specific details to support individual work assignments that involve the collection, generation, evaluation, analysis, or use of environmental data.

The activities in this work assignment involve gathering, evaluating, analyzing, and otherwise using existing environmental data (also known as “secondary” use of data). EPA has determined that the Contractor is operating under the existing PQAPP and that the PQAPP addresses QA requirements for all work related to existing data collection. The applicable sections of the PQAPP are sections 4, 5, 6, 7, 8, 9 and 10. This work assignment also involves collection of new data from sampling activities. An approved SQAPP exists for the CWT sampling program. This SQAPP addresses all supplemental QA needs related to sampling activities. Revisions to the approved SQAPP will be made as directed by the EPQ WACOR as needed to address sampling QA/QC concerns that arise.

In support of this work assignment, the Contractor shall ensure that the work plan provides enough detail to clearly describe:

- Specific objectives of the project(s) supported by this work assignment, including typical questions that must be answered when collecting and analyzing existing data to support EPA’s evaluation of the CWT industry.
- The type of data to be gathered or used under this work assignment to support the project objectives—including data from search engines, federal databases, EPA databases—as a

well as a rationale for when those databases are appropriate and what data available in each will support the project

- The quality objectives needed to ensure the data will support the project objectives, and
- The QA/QC activities to be performed to ensure that any results obtained are documented and are of the type, quality, transparency, and reproducibility needed.

Prior to conducting primary data collection activities not addressed by the existing PQAPP and the approved SQAPP for sampling activities, the contractor shall also be responsible for preparing a supplemental QA/QC plan (SQAPP) or revising the approved SQAPP. The SQAPP must be approved by the WACOR as well as the EAD QA coordinator prior to conducting any primary data collection activities. **Table 2-2** at the end of this Task demonstrates the supplemental QA/QC information that must be included in the SQAPP for collection of new data.

Additional QA Documentation Required

The EPA Quality Manual for Environmental Programs (CIO 2105-P-01-0, May 2000) requires published Agency reports containing environmental data to be accompanied by a readily identifiable section or appendix that discusses the quality of the data and any limitations on the use of the data with respect to their originally intended application. The EPA Quality Manual further requires Agency reports to be reviewed by the QA manager (or other authorized official) before publication to ensure that an adequate discussion of QA and QC activities is included. The purpose of the review is to ensure the reports provide enough information to enable a knowledgeable reader to determine if the technical and quality goals were met for the intended use of the data. Reports should include applicable statements regarding the use of any environmental data presented as a caution about possible misuse of the data for other purposes. For example, a Technical Support Document or Study Report must include a clear discussion of the quality management strategies (including the project goals and objectives, quality objectives and criteria, and QA/QC practices) that were employed to control and document the quality of data generated and used. These documents should also discuss any deviations from procedures documented in the EPA-approved QAPP(s) supporting the project, the reasons for those deviations, any impact of those deviations had on data quality, and steps taken to mitigate data quality issues.

In support of this Agency requirement, all major deliverables (e.g., Reports) produced by the Contractor under this work assignment must include a discussion of the QA/QC activities that were performed to support the deliverable, and this discussion must provide a sufficient level of detail to allow the EAD QA Coordinator (or designee) to determine if the QA/QC strategies implemented for the project sufficiently support the intended use of the data. Upon receipt, the WACOR will review each applicable report and certify whether the Contractor has adhered to the QA requirements documented in the Contractor's PQAPP.

The Contractor also shall provide EPA with monthly reports of QA activities performed during implementation of this work assignment. These monthly QA reports shall identify QA activities performed to support implementation of this work assignment, problems encountered, deviations

from the QAPP, and corrective actions taken. If desired, the Contractor may include this as a part of the contract-required monthly financial/technical progress report.

TASK 2 DELIVERABLES	DEADLINES
Monthly reports of QA work performed (may be included in the Contractor's monthly progress report)	Monthly
SQAPP revisions	As specified in technical direction from the WACOR

Table 3-2. QAPP Elements that Require Additional Explanation in SQAPP for Primary Data Collection Activities not Addressed in PQAPP and approved SQAPP

CWT Study QA Checklist			
QAPP Element	Sufficiently Addressed in PQAPP or Not Applicable to Project	Additional Detail Needed in SQAPP	Explanatory Comments Regarding Additional Detail Needed
A1. Title & Approval Sheet		X	Facility-specific information required for each location to be sampled
Project title		X	
Organization's name		X	
Effective date and/or version identifier		X	
Dated signature of Organization's project manager		X	
Dated signature of Organization's QA manager		X	
Other signatures, as needed (e.g., EAD CL-COR, EAD QA Coordinator)		X	
Revision History		X	
A2. Table of Contents		X	Update
Includes sections, figures, tables, references, and appendices		X	
Document control information indicated (when required by the EPA Project Manager and QA Manager)		X	
A3. Distribution List		X	Update
Includes all individuals who are to implement or otherwise receive the QAPP and identifies their organization		X	
A4. Project/Task Organization		X	Update to identify specific personnel and roles/responsibilities for Task 5. Include specific details, such as laboratory QA/QC personnel.
Identifies key individuals with their responsibilities (e.g., data users, decision makers, project QA manager, Subcontractors, etc.) and contact info.		X	
Organization chart shows lines of authority & reporting responsibilities		X	

CWT Study QA Checklist			
QAPP Element	Sufficiently Addressed in PQAPP or Not Applicable to Project	Additional Detail Needed in SQAPP	Explanatory Comments Regarding Additional Detail Needed
Project QA manager position indicates independence from unit collecting/using data		X	
A5. Problem Definition/Background		X	Describe specific data collection goals of project to be obtained through field sampling.
Clearly states problem to be resolved, decision to be made, or hypothesis to be tested		X	
Identifies project objectives or goals		X	
Historical & background information		X	
Cites applicable technical, regulatory, or program-specific quality standards, criteria, or objectives		X	
A6. Project/Task Description		X	Describe specific sampling activities to be conducted, sample locations, analytes, QA/QC measures, etc.
List measurements to be made/data to obtain		X	
Notes special personnel or equipment requirements		X	
Provides work schedule		X	
A7. Quality Objectives & Criteria for Measurement Data		X	Describe specific quality and measurement objectives to be utilized
States quality objectives and limits, both qualitatively & quantitatively		X	
States & characterizes measurement quality objectives as to applicable action levels or criteria		X	
A8. Special Training Requirements/ Certifications		X	Describe any specific training or certification requirements needed and procedures for training
Identifies specialized skills, training or certification requirements		X	
Discusses how this training will be provided/the necessary skills will be assured and documented		X	
A9. Documents & Records		X	Describe what data will be generated, how data will be obtained/presented, how QA/QC measures will be documented, procedures for record keeping, etc.
Lists information & records to be included in data report (e.g., raw data, field logs, results of QC checks, problems encountered)		X	
Notes required project & QA records/reports		X	
Gives retention time and location for records and reports		X	
B1. Sampling Process Design (Experimental Design)		X	Fully document sampling design and factors such as matrix interferences due to TDS, analysis of radioactivity, sampling equipment, etc.
Types and number of samples required		X	

CWT Study QA Checklist			
QAPP Element	Sufficiently Addressed in PQAPP or Not Applicable to Project	Additional Detail Needed in SQAPP	Explanatory Comments Regarding Additional Detail Needed
Sampling network design & rationale for design		X	
Sampling locations & frequency of sampling		X	
Sample matrices		X	
Classification of each measurement parameter as either critical or needed for information only		X	
Validation study information, for non-standard situations		X	
B2. Sampling Method Requirements		X	Fully describe analytical methods to be utilized, sampling techniques, equipment, etc.
Identifies sample collection procedures & methods		X	
Lists equipment needs		X	
Identifies support facilities		X	
Identifies individuals responsible for corrective action		X	
B3. Sample Handling & Custody Requirements		X	Fully document sample handling, preservation, shipping and tracking
Notes sample handling requirements		X	
Notes chain of custody procedures, if required	X		COC not required for this project
B4. Analytical Methods Requirements		X	Fully describe and reference both field and laboratory methods to be utilized and specific requirements for laboratories utilized. Includes deviations from approved analytical methods due to projected matrix interferences.
Identifies analytical methods to be followed (with all options) & required equipment		X	
Specifies any specific method performance criteria		X	
States requested lab turnaround time		X	
Provides validation information for non-standard methods		X	
Identifies procedures to follow when failures occur		X	
Identifies individuals responsible for corrective action and appropriate documentation		X	
B5. Quality Control Requirements		X	Fully document QC procedures and goals for field and laboratory analyses
Identifies QC procedures & frequency for each sampling analysis, or measurement technique, as well as associated acceptance criteria and corrective action		X	
Procedures used to calculate QC statistics (e.g., precision, bias, accuracy)		X	

CWT Study QA Checklist			
QAPP Element	Sufficiently Addressed in PQAPP or Not Applicable to Project	Additional Detail Needed in SQAPP	Explanatory Comments Regarding Additional Detail Needed
B6. Instrument/Equipment Testing, Inspection, and Maintenance Requirements		X	Fully document relevant requirements and procedures for both field analytes and laboratory analyses
Identifies acceptance testing of sampling and measurement systems		X	
Describes equipment needing maintenance and frequency for such maintenance		X	
Notes availability & location of spare parts		X	
B7. Instrument Calibration & Frequency		X	Include for field instruments
Identifies equipment needing calibration and frequency for such calibration		X	
Notes required calibration standards and/or equipment		X	
Cites calibration records & manner traceable to equipment		X	
B8. Inspection/Acceptance Requirements for Supplies & Consumables		X	Document relevant criteria
States acceptance criteria for supplies & consumables		X	
Notes responsible individuals		X	
B9. Data Acquisition Requirements for Non-Direct Measurements	X		
Identifies type of data needed from non-measurement sources (e.g., computer databases and literature files), along with acceptance criteria for their use			
Describes any limitations of such data			
B10. Data Management		X	Update to consider laboratory/field collected data
Describes standard record keeping & data storage and retrieval requirements	X		
Checklist or standard forms attached to QAPP		X	
Describes data handling equipment & procedures used to process, compile and analyze data (e.g., required computer hardware & software)	X		
C1. Assessment and Response Actions		X	Update to consider laboratory/field collected data
Lists required number, frequency, & type of assessments, with approximate date & names of responsible personnel		X	
Identifies individuals responsible for corrective actions		X	
C2. Reports to Management		X	Update to consider laboratory/field collected data
Identifies the preparer and recipients of reports			
Identifies frequency and distribution of reports for:			
• Project status			
• Results of performance evaluations & audits			
• Results of periodic data quality assessments			
• Any significant QA problems			

CWT Study QA Checklist			
QAPP Element	Sufficiently Addressed in PQAPP or Not Applicable to Project	Additional Detail Needed in SQAPP	Explanatory Comments Regarding Additional Detail Needed
D1. Data Review, Verification & Validation		X	Update to consider laboratory/field collected data
States criteria for accepting, rejecting, or qualifying data			
Includes project-specific calculations or algorithms			
D2. Verification & Validation Methods		X	Update to consider laboratory/field collected data
Describes process for data verification and validation			
Identifies issue resolution procedure and responsible individuals			
Identifies method for conveying these results to data users			
D3. Reconciliation with User Requirements		X	Update to consider laboratory/field collected data
Describes process for reconciling with DQOs and reporting limitations on use of data			

Task 3: General Technical Support

Using information provided by the WACOR, along with information gathered or developed by the contractor, the contractor shall assemble information, create and/or modify documents and perform analyses related to centralized waste treatment facilities as directed by the WACOR through written technical direction. The tasks may include work such as:

- Summarizing data to brief management
- Support in preparing or gathering data for presentations at conferences
- Collecting and analyzing secondary data
- Revising work products prepared under WA 3-54, based on comments provided by EPA
- Attending meetings or preparing materials and participating in meetings, conferences and workshops to support EPA's outreach activities to the public and industry (these materials may include reports, brochures, maps, or other presentation materials)
- Attending centralized waste treatment industry technical meetings and/or conferences as directed by EPA
- Contacting state agencies to collect information about common wastewater management practices and availability of waste water treatment facilities for oil and gas extraction wastewaters

For purposes of preparing a work plan, the contractor shall assume that there shall be approximately ten (10) written technical directives requiring quick turn-around and the contractor will be asked to attend four off-site meetings.

TASK 3: DELIVERABLES	DEADLINES
General technical support (as above)	2 days after receiving technical direction, or as specified in technical direction, from the WACOR

Task 4: Finalize Detailed Study of the CWT Industry

The contractor shall provide support to EPA in completing EPA's detailed study of the CWT industry for facilities that manage oil and gas extraction wastewaters. The contractor shall incorporate information and data obtained from 308 letters and sampling episodes into the report. The contractor shall incorporate comments received from the WACOR on draft chapters prepared under WA 3-54, and prepare a draft final version of the report for review by EPA. Following review of the draft final report, the contractor shall incorporate EPA comments and prepare a final report. The contractor shall submit an index of all materials referenced and all memorandums and analyses conducted, with results, supporting the study.

TASK 4: DELIVERABLES	DEADLINES
Draft report for WACOR review	November 30, 2016
Draft final report incorporating WACOR comments	January 26, 2017
Submit final index of materials	February 3, 2017

Task 5: Sampling and Data Analysis – CWT Study

5.1 Characterization Sampling

The contractor shall provide support to EPA in conducting wastewater characterization sampling activities at CWT facilities that accept oil and gas extraction wastewaters. The contractor shall assist EPA in identifying candidate facilities for sampling. EPA anticipates that characterization sampling under Task 5.1 will consist primarily of one-time grab sampling for characterization purposes. These characterization samples will have the following purposes:

- Characterize untreated wastewater characteristics for wastewaters produced from oil and gas extraction operations that are received at CWT facilities
- Characterize treated effluent characteristics for determining facility effectiveness in removing target pollutants
- Characterize wastewater characteristics at intermediate treatment points to determine unit process effectiveness in removing target pollutants
- Characterize treatment residuals and discharges from other ancillary activities

For purposes of preparing a work plan, the contractor shall assume that one (1) one-day characterization sampling episode shall be conducted during the period of performance of this work assignment. The contractor shall assume two contractors shall participate in a

characterization sampling episode in Pennsylvania or West Virginia. A total of six sample points are anticipated. Additional samples for quality assurance (such as duplicate and trip blank, field blank, matrix spike, etc.) samples shall also be collected, as specified in individual Sampling and Analysis Plans (SAPs) for each location. In addition, the contractor shall conduct any carry-over activities related to sampling conducted during the previous work assignment, such as data analysis and preparation of Sampling Episode Reports.

The contractor shall provide all sampling equipment, materials (such as sampling bottles), supplies and consumables (such as ice) necessary to conduct the sampling, preserve samples and to package and ship the samples to laboratories. The contractor shall also be responsible for freight/shipment and tracking of samples to analytical laboratories and maintaining documentation (such as traffic reports).

Laboratory Services

The contractor shall provide technical support to EPA in acquiring laboratory services to analyze the samples for parameters of interest. In obtaining laboratory services, the contractor shall ensure that the laboratory(ies) demonstrates sufficient recent experience and qualifications and identify methods to be used for analyzing oil and gas wastewater samples (or samples with similar matrices) and that laboratory services comply with EPA's *Policy to Assure Competency of Laboratories, Field Sampling, and Other Organizations Generating Environment Measurement Data under Agency-Funded Acquisitions (FEM-2011-01)*. These wastewaters have unique characteristics and complex matrices. Total dissolved solids (TDS) concentrations in samples can exceed 120,000 mg/L according to available data. Laboratories shall also have experience in analyzing radionuclides expected to be present in these samples. These high levels of chlorides and other dissolved solids can pose significant challenges to laboratory analysts. As a result, the contractor shall consult with EPA regarding appropriate analytical methods and sample collection, handling, preparation and preservation and coordinate with laboratories in advance of sample collection in order to ensure that methods selected for analysis of samples and the laboratories obtained are capable of detecting parameters at the concentrations expected.

In addition, field analysis of parameters such as temperature, pH and conductivity may be required.

The contractor shall review available data that has been compiled by EPA regarding the expected level of these parameters in these wastewaters and consult with the WACOR regarding analytical methods and detection levels for the pollutants of interest. In addition, the contractor may recommend additional parameters based on review of existing data regarding these wastewater characteristics. Adjustments to analytes and methods must be reflected in the SAPs.

The contractor shall ensure that the laboratories report results in a similar manner for all episodes, including the reporting of results for metals that are below the report limit but above the method detection limit (e.g., J-values). The contractor shall consult with EPA regarding time frames for laboratories to submit analytical results prior to selection of laboratory services.

In addition, the contractor shall coordinate with laboratories to ensure timely and efficient analysis of the collected wastewater samples and evaluate pollutant characteristics and treatment efficacy. The contractor shall prepare and maintain a Sample Tracking Report that shall include a summary of any problems identified and the status of efforts to resolve the problems. The contractor shall consult with the WACOR when any laboratory or data quality issues arise in order to address these issues in a timely fashion. The contractor shall compile the laboratory results in a format approved by EPA and as described in the laboratory competency policy.

The services to be performed under this task are strictly limited to those of a technical and scientific nature, encompassing the tasks of collecting samples, acquiring laboratory services, including tracking the location and status of collected samples throughout the entire analytical and data reporting process. The contractor shall also coordinate with laboratories to ensure timely and efficient analysis of the collected wastewater samples; resolve issues that may arise during sample analysis or during QA/QC reviews of laboratory results; and provide technical support to EPA regarding analytical methods, data review, quality assurance, and the effluent guidelines sampling program.

Documentation

Sampling Plans and Sampling Episode Reports

Each characterization sampling episode shall require the development of a site-specific sampling and analysis plan (SAP) and a site-specific health and safety (H&S) plan. Draft and final SAPs shall be developed according to the schedule of deliverables table below. The SAPs shall provide detailed descriptions on the locations to be sampled, the parameters to be sampled, the sample collection and preservation techniques to be utilized, sample labeling and tracking protocols, and other information and protocols as necessary to assure the successful collection, handling, preservation, shipping and tracking of samples. The SAPs shall also contain detailed information on field parameters to be measured and collection of operational details regarding the facilities sampled (e.g., flow rates, etc.).

For facilities where site visits have been conducted in advance of any characterization sampling, much of the facility-specific information (e.g., sampling locations, number of sample points, equipment needed, etc.) required to prepare SAPs and H&S plans will have been obtained in advance during site visits. EPA anticipates that for some facilities, characterization sampling may be conducted at the same time as site visits, and that the contractor or EPA will not have conducted a previous visit. In these cases, facility-specific information necessary to prepare SAPs and H&S plans will be obtained through discussions with facility personnel. Specific details on SAPs and H&S plans shall be developed for each characterization sampling episode through consultation with the WACOR.

At the completion of each sampling episode, the contractor shall develop a draft sampling episode report (SER) that documents the sampling conducted and any deviations from the SAP. As sampling results are available, the contractor shall compile the data into data result tables for use in the final draft SERs.

Sample Tracking Report

The contractor shall create and maintain information files which contain the status of all samples collected, including sample collection date, date of sample receipt at the laboratory, date laboratory analytical data is received, status of data quality reviews, and projected timeframes for completing reviews of data. The report shall also identify any anticipated problems or difficulties that might result in scheduling delays. This information shall be provided monthly until all samples collected by EPA have been analyzed and the database of laboratory results is complete.

5.2. General Technical Support

If necessary, the contractor shall provide general technical support to EPA regarding analytical methods, data review, quality assurance and the effluent guidelines sampling program. During the period of performance, the contractor may have to respond to approximately 3-5 technical support inquiries. The following are activities the contractor may have to perform:

- Provide the WACOR with technical responses to analytical method and data inquiries;
- Research solutions to analytical problems;
- Conduct literature searches;
- Fill document requests;
- Provide the raw laboratory data and information related to data review; and
- Track the status and disposition of technical inquiries.

TASK 5 SCHEDULE OF DELIVERABLES

TASK	DELIVERABLE	DEADLINE
5.1	Draft SAPs and H&SP	21 days prior to sampling episode
	Final SAPs and H&SP	7 days after receiving EPA comments on the draft sampling plan.
	Draft SER (without data)	21 days after completing the sampling episode
	Revised SER	14 days after receiving EPA comments
	Final SER (with data)	14 days after final QC data is available
	Database of laboratory analytical results	30 days after receipt of all data from laboratories
5.2	As specified in technical direction from the WACOR	

Task 6: Management of Confidential Business Information

During the course of the work assignment, the contractor shall be accessing and evaluating CBI. As such, the contractor shall adhere to EPA's CBI policy and procedures as described in the contract performance work statement, Section 3.0, for all tasks in this WA, as applicable. The contractor shall obtain CBI security clearance to use CBI information as outlined in Section 3.0 of Contract EP-C-12-021. The contractor shall utilize CBI information in accordance with contract requirements and limitations to include using its most recent "Security Plan for Handling Confidential Business Information under the Clean Water Act." The contractor shall also utilize CBI information in accordance with contract requirements and limitations, including the TSCA CBI security plan as required.

TASK 6 DELIVERABLES	DEADLINES
A CBI program in compliance with the requirements of contract EP-C-12-021 and the requirements of the contractor's CBI Plan.	Ongoing

Task 7: Questionnaire/Survey/308 Letter Support - ELG Development

Upon initiation of this task by technical direction, the contractor shall provide support to EPA in developing Clean Water Act section 308 letters and questionnaires for industry surveys of CWT facilities to support effluent guidelines development. The contractor shall provide support in developing technical and engineering questions for 308 letters and questionnaires and in analyzing data received.

TASK 7 DELIVERABLES	DEADLINES
Technical and engineering questions for letters and surveys	Established through technical direction

Task 8: Cost and Pollutant Reduction Analysis – ELG Development

Upon initiation of this task by technical direction, the contractor shall provide support to EPA in determining candidate BAT technologies for existing and new sources and in analyzing the costs to comply and the pollutant reductions that would result from revisions to the CWT effluent guidelines for facilities that accept oil and gas extraction wastes. For each existing in-scope facility, the contractor shall estimate, using data such as from 308 letters, surveys and monitoring data, the current treatment in place, current (baseline) wastewater volumes and pollutant loads received, and wastewater volumes and pollutant loads discharged. The contractor shall estimate the additional treatment technologies, operational changes and monitoring costs that would be required to meet revised effluent limitations and pretreatment standards reflecting candidate best

available technologies and the incremental cost (including capital and operation and maintenance) and performance of those technologies for existing facilities. For new sources, the contractor shall estimate costs and performance for new facilities of various size and characteristics sufficient to analyze barrier to entry for new facilities to enter the industry. The contractor shall prepare a memorandum that includes a proposed methodology for this analysis. Following review and comment by the WACOR, the contractor shall conduct the analyses and present results in a draft report, including all assumptions and calculations made. The contractor shall assume that several iterations (five or more) of the analysis may be required to evaluate various assumptions and conditions.

TASK 8 DELIVERABLES	DEADLINES
Cost and pollutant reduction methodology	Established through technical direction
Analysis report	Established through technical direction

Task 9: Record Support – ELG Development

Upon initiation of this task by technical direction, the contractor shall assemble and maintain a record of all documents relevant to the rulemaking proceedings. The contractor shall request authorization from EPA to contact the Water Docket and enter information into FDMS. When authorization is received, the contractor shall contact the Office of Water Docket to ensure that the record will meet the dockets requirements including any electronic docket requirements. This includes preparation of electronic versions of documents for the Agency’s electronic docket system. The index of rulemaking record materials shall be submitted to the WACOR quarterly. The record documents and index are to be delivered to the WACOR upon completion of the Work Assignment or when directed by the WACOR in writing.

TASK 9 DELIVERABLES	DEADLINES
Maintain both the paper and the electronic records	Ongoing throughout the period of performance
Submit index of record materials to WACOR	Quarterly (each due on the 15 th of November, February, May and August respectively)
Submit record documents and index to WACOR	Upon completion of the Work Assignment or written technical direction from the WACOR before the completion of the WA.

EPA United States Environmental Protection Agency Washington, DC 20460 Work Assignment						Work Assignment Number 4-54			
						<input type="checkbox"/> Other <input type="checkbox"/> Amendment Number:			
Contract Number EP-C-12-021			Contract Period 09/26/2012 To 09/25/2017 Base Option Period Number 4			Title of Work Assignment/SF Site Name ELG Development for CWT			
Contractor EASTERN RESEARCH GROUP, INC.				Specify Section and paragraph of Contract SOW See PWS					
Purpose: <input checked="" type="checkbox"/> Work Assignment <input type="checkbox"/> Work Assignment Close-Out <input type="checkbox"/> Work Assignment Amendment <input type="checkbox"/> Incremental Funding <input checked="" type="checkbox"/> Work Plan Approval						Period of Performance From 09/29/2016 To 09/25/2017			
Comments:									
<input type="checkbox"/> Superfund Accounting and Appropriations Data <input checked="" type="checkbox"/> Non-Superfund									
Note: To report additional accounting and appropriations data use EPA Form 1900-69A.									
SFO <input type="checkbox"/> (Max 2)									
Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars) (Cents)	Site/Project (Max 8)	Cost Org/Code
1									
2									
3									
4									
5									
Authorized Work Assignment Ceiling									
Contract Period:		Cost/Fee: \$0.00		LOE: 0					
09/26/2012 To 09/25/2017									
This Action:		\$168,156.00		1,605					
Total:		\$168,156.00		1,605					
Work Plan / Cost Estimate Approvals									
Contractor WP Dated: 10/27/2016		Cost/Fee \$168,156.00		LOE: 1,605					
Cumulative Approved:		Cost/Fee \$168,156.00		LOE: 1,605					
Work Assignment Manager Name Anthony Tripp <div style="display: flex; justify-content: space-between; border-top: 1px solid black; margin-top: 10px;"> (Signature) (Date) </div>						Branch/Mail Code:			
						Phone Number: 202-566-1419			
						FAX Number:			
Project Officer Name Meghan Hessenauer <div style="display: flex; justify-content: space-between; border-top: 1px solid black; margin-top: 10px;"> (Signature) (Date) </div>						Branch/Mail Code:			
						Phone Number: 202-566-1040			
						FAX Number:			
Other Agency Official Name <div style="display: flex; justify-content: space-between; border-top: 1px solid black; margin-top: 10px;"> (Signature) (Date) </div>						Branch/Mail Code:			
						Phone Number:			
						FAX Number:			
Contracting Official Name Brad Heath <div style="display: flex; justify-content: space-between; border-top: 1px solid black; margin-top: 10px;"> (Signature) (Date) </div>						Branch/Mail Code:			
						Phone Number: 513-487-2352			
						FAX Number:			

EPA United States Environmental Protection Agency Washington, DC 20460 Work Assignment						Work Assignment Number 4-55			
						<input type="checkbox"/> Other <input type="checkbox"/> Amendment Number:			
Contract Number EP-C-12-021			Contract Period 09/26/2012 To 09/25/2017 Base Option Period Number 4			Title of Work Assignment/SF Site Name Petroleum Refining Study			
Contractor EASTERN RESEARCH GROUP, INC.				Specify Section and paragraph of Contract SOW See PWS					
Purpose: <input checked="" type="checkbox"/> Work Assignment <input type="checkbox"/> Work Assignment Close-Out <input type="checkbox"/> Work Assignment Amendment <input type="checkbox"/> Incremental Funding <input type="checkbox"/> Work Plan Approval						Period of Performance From 10/13/2016 To 09/25/2017			
Comments:									
<input type="checkbox"/> Superfund Accounting and Appropriations Data <input checked="" type="checkbox"/> Non-Superfund									
SFO <input type="checkbox"/> Note: To report additional accounting and appropriations date use EPA Form 1900-69A. (Max 2)									
Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars) (Cents)	Site/Project (Max 8)	Cost Org/Code
1									
2									
3									
4									
5									
Authorized Work Assignment Ceiling									
Contract Period:		Cost/Fee:			LOE:				
09/26/2012 To 09/25/2017									
This Action:									
Total:									
Work Plan / Cost Estimate Approvals									
Contractor WP Dated:				Cost/Fee		LOE:			
Cumulative Approved:				Cost/Fee		LOE:			
Work Assignment Manager Name Phillip Flanders <div style="display: flex; justify-content: space-between; border-top: 1px solid black; margin-top: 10px;"> (Signature) (Date) </div>						Branch/Mail Code: Phone Number: 202-566-8323 FAX Number:			
Project Officer Name Meghan Hessenauer <div style="display: flex; justify-content: space-between; border-top: 1px solid black; margin-top: 10px;"> (Signature) (Date) </div>						Branch/Mail Code: Phone Number: 202-566-1040 FAX Number:			
Other Agency Official Name <div style="display: flex; justify-content: space-between; border-top: 1px solid black; margin-top: 10px;"> (Signature) (Date) </div>						Branch/Mail Code: Phone Number: FAX Number:			
Contracting Official Name Brad Heath <div style="display: flex; justify-content: space-between; border-top: 1px solid black; margin-top: 10px;"> (Signature) (Date) </div>						Branch/Mail Code: Phone Number: 513-487-2352 FAX Number:			

**Performance Work Statement
Contract Number EP-C-12-021
Work Assignment 4-55**

Title: Petroleum Refining Detailed Study

Work Assignment Contracting Officer's Representative (WACOR):

Name: Phillip Flanders
Mail Code: 4303T
Phone Number: 202-566-8323
Fax Number: 202-566-1053

Alternate Work Assignment Contracting Officer's Representative:

Name: Tom Born
Mail Code: 4303T
Phone Number: 202-566-1001
Fax Number: 202-566-1053

Period of Performance: October 13, 2016 through September 25, 2017

Purpose

The purpose of this work assignment is to support EPA's review of the petroleum refining point source category to determine whether revisions to the current effluent limitations guidelines and standards are warranted.

Introduction

This work assignment supports EPA's study of wastewater discharges from petroleum refining (PR) facilities.

EPA currently regulates discharges from the PR category as specified by the effluent limitations guidelines and standards (collectively referred to as ELGs) codified at 40 CFR Part 419. A study of this category will help EPA determine if changes to the existing ELGs are needed. Recent changes to the industry may have resulted in the creation of new wastestreams or changes to wastewater characteristics. EPA has observed an increase in metals discharges as well as an increase in the number of refineries reporting the presence of metals in their wastewater discharges. However, only one metal (chromium) is regulated by the current PR ELGs.

Under this work assignment, the contractor shall continue providing technical support to EPA in its detailed study of the PR industry. Key tasks under this work assignment include:

- updating the industry profile and memoranda produced under previous work assignments, as necessary;
- providing assistance in developing an industry questionnaire, identifying the facilities to whom the questionnaires will be distributed, distributing the questionnaire, and compiling and analyzing questionnaire response data;
- providing assistance in designing and executing the industry self-sampling program, including compiling and analyzing the sampling data;
- providing technical support for site visits and other activities.

General Work Assignment Requirements (PWS Section 3.0)

Deliverable Formatting and Terminology

Throughout this work assignment, the contractor shall provide draft and final reports to EPA in electronic format, with hard copy format also provided when directed by the work assignment manager. The contractor shall discuss the computer file formats to be used for word processing, spreadsheet, database and graphics with the WACOR prior to file preparation. The WACOR will identify for the contractor which documents will be posted on EPA's Effluent Guidelines webpage. These documents posted to the Effluent Guidelines webpage must be Section 508 compliant.¹

Travel

Non-local travel by the contractor employees and/or subcontractors will be required to support the scope of this work assignment (e.g., conducting site visits). The contractor shall provide specific travel details and costs in a request for travel approval by the WACOR and the Contract Level Contracting Officer's Representative (CL-COR) before each trip occurs (as specified by the contract per clause H.26).

Event Expenses Not to Exceed \$20,000

No single event under this Work Assignment is anticipated to exceed \$20,000. The Contractor shall immediately notify the EPA Contracting Officer, CL-COR and WACOR of any anticipated event involving support for a meeting, conference, workshop, symposium, retreat, seminar or training that may potentially incur \$20,000 or more in cost during performance. Conference expenses are all direct and indirect costs paid by the government and include any associated authorized travel and per diem expenses, room charges for official business, audiovisual use, light refreshments, registration fees, ground transportation and other expenses as defined by the Federal Travel Regulations. All outlays for conference preparation should be included, but the federal employee time for conference preparation should not be included. After notifying EPA of the potential to reach this threshold, the Contractor shall not proceed with the task(s) until authorized to do so by the Contracting Officer.

Confidential Business Information

¹ See <http://www.epa.gov/epahome/accessibility.htm>.

The contractor shall, at all times, adhere to Confidential Business Information (CBI) procedures when handling industry information. The contractor shall manage all reports, documents, and other materials and all draft documents developed under this work assignment in accordance with the procedures set forth in the “Security Plan for Handling Confidential Business Information Under the Clean Water Act” (September 2002) or its successor approved plans.

Identification as Contracting Staff

To avoid the perception that contractor personnel are EPA employees, contractor personnel shall be clearly identified as independent contractors of EPA when participating in events with outside parties and visiting field sites. When speaking with the public the contractor should refer all interpretations of policy to the WACOR.

Limitation of Contractor Activities

The contractor shall submit drafts of all deliverables to the WACOR for review prior to submission of the final product. The contractor shall incorporate all WACOR comments into all final deliverables, unless otherwise agreed upon by the WACOR. The contractor will adhere to all applicable EPA management control procedures as implemented by the EPA Contracting Officer (CO), CL-COR and WACOR.

Deliverable Due Dates

For the purpose of developing this work plan, the contractor shall assume the deliverable due dates in the tables for each task presented further. Major technical deliverables shall be subject to internal contractor peer review by an expert(s) not directly involved in the mainstream Work Assignment tasks. Deliverables will be prepared with proper adherence to EPA style and format requirements.

Tasks

Task 1: Program Management

The contractor shall prepare and submit a detailed work plan that outlines the approach and methodology that shall be used to perform the tasks identified in this Work Assignment. The work plan shall specify the work to be done for each task, and the allocation of personnel, hours and budget by task and deliverables. The work plan shall be submitted to the CL-COR/WACOR in accordance with contract requirements.

This task also includes contract management such as communications between EPA Contracting Officer Representatives and their respective contractor counterparts. These communications would concern the progress made on the work assignment tasks and coordination of activities to facilitate optimal contractor performance.

The contractor shall provide electronic copies of the monthly progress reports to the WACOR and CL-COR. Each progress report shall describe the technical work and expenditures for the same time period as the corresponding invoice. The reports shall list by task the amount of work

completed and include a table of hours by personnel for each task. The reports also shall identify any problems or difficulties. The contractor shall inform the CO, CL-COR and WACOR in writing when 50%, 75%, and 90% of the allocated hours or dollars have been expended.

TASK 1 DELIVERABLES	DEADLINES
Work Plan	In accordance with contract requirements
Progress Reports	Monthly

Task 2: General Technical Support for Detailed Study of the Petroleum Refining Industry

Using information provided by the WACOR, along with information gathered or developed by the contractor, the contractor shall assemble information, create and/or modify documents, and perform analyses related to petroleum refining facilities as directed by the WACOR through written technical direction. The tasks may include work such as:

- Summarizing data to brief management
- Collecting and analyzing existing data
- Attending meetings or preparing materials and participating in meetings, conferences, and workshops to support EPA's outreach activities to the public and industry (these materials may include reports, brochures, maps, or other presentation materials)
- Attending petroleum refining industry technical meetings and/or conferences as directed by the WACOR
- Contacting state agencies or technology vendors to collect information about petroleum refining operations, wastewater discharge, and wastewater treatment.
- Writing a status summary for a 304(m) ELG plan

During a previous option period, the contractor provided support to EPA in evaluating the following:

- Update industry profile information to identify refineries that use catalytic reforming, process heavy crude; and have installed new air pollution control equipment that generates wastewater
- Identification of pollutants of interest and associated wastewater treatment technologies for these pollutants
- Identification of additional data needs for this industry, including information on industry economics and potential environmental impacts of current discharges
- Collection of additional data through permit and permit application reviews, site visits, or other methods.

Under this Work Assignment, the contractor shall continue work to support EPA on these subtasks and shall prepare memoranda summarizing the compiled information as directed by the WACOR to support the detailed study.

The contractor may utilize other potential data sources in developing the study including technical and scientific literature, commercial data sources, vendors, internet searches, and state regulatory agencies. In addition, data collected via the data request questionnaire (Task 3) and industry self-sampling program (Task 4) is expected to be a primary source of information regarding wastewater characteristics and treatability.

The contractor shall also collect and summarize information related to economic aspects of the industry as well as environmental impacts associated with discharges from this industry. The cost and performance information obtained by the contractor may be used as inputs for these analyses. The contractor shall therefore consult with EPA regarding use of data and information collected and generated in these corollary analyses.

EPA does not expect that the data collection and analysis activities required by this work assignment, including the data request questionnaire (Task 3), the industry self-sampling program (Task 4) and site visits (Task 8), will be completed by the end of this option period. However, the contractor should be prepared to use the results of the data compilation and analysis (Task 9) to begin drafting sections of the Detailed Study Report when given Technical Direction by the WACOR.

For the purpose of preparing the work plan, the contractor shall assume that there shall be approximately ten written technical directives requiring quick turn-around and the contractor will be asked to attend two meetings or conferences that require travel.

TASK 2 DELEVERABLES	DEADLINE
General Technical Support	2 days after receiving technical directions, or as specified in technical direction from WACOR
Revise Memoranda	As directed by the WACOR
Draft Detailed Study Report Sections	As directed by the WACOR

Task 3: Clean Water Act §308 Data Request Questionnaire

EPA will use Clean Water Act (CWA) §308 authority to collect information and data from nine or fewer petroleum refining entities. Under the previous work assignment, the contractor assisted EPA with developing the questions to ask facilities as well as a potential facility distribution list. The contractor shall include questions on potential environmental impacts of current discharges if necessary. The contractor shall work with EPA to determine how the §308 questionnaires will be distributed. The contractor shall also provide other support for questionnaire development as specified through technical direction, such as meeting with industry to discuss the questionnaires and contacting facilities to clarify technical and engineering responses, etc.

Support provided under this work assignment includes developing the industry survey instrument, sample frame, mailing list, tracking systems, database fields, and data entry procedures; mailing and follow up efforts; receiving and reviewing submissions and following-up on missing or incomplete submissions; requesting additional data or clarification as

necessary; and data entry into a consolidated database. The contractor shall establish and operate a temporary help-line.

For purposes of this WA, the contractor shall assume that they will develop draft §308 questions in Microsoft Word format and that the contractor will develop and finalize the distribution list. The contractor shall convert the questionnaire to the final format as directed by EPA. The contractor shall then distribute the questionnaire to the selected respondents. The contractor shall assume that the §308 request will be mailed during fall or winter of 2016. Note that data compilation and analyses are addressed in Task 9.

TASK 3 DELIVERABLES	DEADLINES
Final Draft Questionnaire	September, 2016
Final Questionnaire (in final format)	October, 2016
Provide Assistance to Respondents	Following distribution

Task 4: PR Industry Self-Sampling Program

The contractor shall include in the §308 questionnaire a request for each of the 9 entities to provide wastewater characterization data to EPA and shall document the request in a PR Industry Self-Sampling Plan. The contractor shall provide support to EPA in identifying specific wastewater streams to sample and the pollutants that shall be analyzed types of wastewater characterization self-sampling data to request from PR facilities. EPA anticipates that self-sampling will consist primarily of one-time grab sampling for characterization purposes. These characterization samples may have the following purposes:

- Characterize untreated wastewater characteristics prior to commingling with other wastewater streams
- Characterize wastewater characteristics at intermediate treatment points to determine unit process effectiveness in removing target pollutants
- Characterize treated effluent characteristics

Sample analyses may include, but not be limited to: total dissolved solids, conventional pollutants, other classical pollutants, volatile organics, semi-volatile organics and metals. The final list of analytes and analytical methods to be used by industry shall be prepared in consultation with the WACOR. Additional samples for quality assurance shall also be collected by industry, as specified in the PR Industry Self-Sampling Plan.

The contractor shall prepare a draft and final PR Industry Self-Sampling Plan for characterization sample collection, including preparation of the sampling section of the PR project-specific QAPP covering data collection activities, according to the Task 6 below.

The contractor shall review available data that is available regarding the expected level of parameters in these wastewaters and consult with the WACOR regarding analytical methods and detection levels for the pollutants of interest. In addition, the contractor may recommend additional parameters based on review of existing data regarding these wastewater characteristics.

The contractor shall specify in the sampling plan that the industry report results back to EPA in a specific manner and format, including the reporting of results for metals that are below the reporting limit but above the method detection limit (e.g., J-values).

If necessary, the contractor should be prepared to coordinate with EPA and refinery representatives to develop refinery-specific sampling plans. This may require calls or meetings with staff from selected refineries or other tasks provided via written technical direction by the WACOR. For the purpose of preparing the work plan, the contractor should assume that each meeting will take 2 hours and occur via teleconference. Additionally, the contractor should assume that fewer refineries will receive sampling plans than will receive data request questionnaires (Task 3).

The contractor shall participate in audits of the execution of refinery-specific sampling plans at a select number of refineries. For the purpose of preparing the work plan, the contractor should assume that they will participate in 5 audits.

TASK 4 DELIVERABLES	DEADLINES
Draft PR Industry Generic Self-Sampling Plan	As directed by WACOR
Final PR Industry Self-Sampling Plan	14 Days after receiving EPA review comments
Draft refinery-specific sampling plans	As directed by WACOR
Final refinery-specific sampling plans	14 Days after receiving EPA review comments
Distribute refinery-specific sampling plans, including meetings with refinery staff	As directed by WACOR
Audit execution of sampling plans	As directed by WACOR

Task 5: Environmental Assessment

As directed by the WACOR, the contractor shall draft the environmental assessment section of the detailed study, including a summary of literature review completed and any case studies identified.

TASK 5 DELIVERABLES	DEADLINES
Draft Environmental Assessment section of the detailed study, including a summary of literature review completed and any case studies identified.	Via Technical Direction from the WACOR

Task 6: Quality Assurance

EPA policy requires that an approved Quality Assurance Project Plan (QAPP) or Programmatic Quality Assurance Project Plan (PQAPP) be in place for work that involves the collection, generation, evaluation, analysis or use of primary environmental data. The QAPP or PQAPP defines and documents how specific data generation and collection activities shall be planned, implemented, and assessed during a particular project. This contract has an approved PQAPP for all necessary work envisioned under this work assignment, with the exception of supplemental QA/QC information in the PR Industry Self-Sampling Plan for new data collection activities as described below and in Task 3 above.

Background

Quality Assurance Project Plans are required under the Agency's Quality Assurance Policy CIO-2105, formerly EPA Order 5360.1 A2 (May 2000), and implementing guidance CIO-2105-P-01-0 (May 2000). All projects that involve the generation, collection, analysis, and use of environmental data must have an approved Quality Assurance Project Plan (QAPP) in place prior to the commencement of the work. Examples of these environmental data operations are provided in **Table 5-1** below.

Table 6-1. Examples of work that involves the collection, generation, evaluation, analysis, or use of environmental data

Item	Examples
Data	Includes field sampling information (sample location information, flow measurements, temperature, pH, physical observations, etc.), laboratory measurements (e.g., chemical, physical, biological, radiological measurements), data collected from questionnaires, economic data, census data, and any other types of existing data (i.e., data generated for a different purpose or generated by a different organization)
Data generation	Includes field studies, laboratory studies, and generation of modeling output
Data collection	Includes field surveys, questionnaire surveys, literature searches, and third party data
Data evaluation	Includes data inspection, review, assessment, and validation
Data analysis	Includes statistical, engineering, and economic analysis, and testing, evaluation, and validation of methods and models; database creation, data extraction, and data manipulation
Data Use	Any use of data to support EPA decisions, regulations, policy, publications, or tools (including effluent guidelines, 304(m) program, standards, environmental assessments, and models, tools, or reports disseminated by EPA to assist other organizations in implementing environmental programs)

Note that QAPPs are required for the development or revision of models and software that support the generation, collection, evaluation, analysis, or use of data. (A model is set of equations and assumptions used to predict unknown data.) When existing models are used as a

tool to generate or evaluate data, the project QAPP must describe the model and explain how it will be used and how its output will be evaluated to ensure the modeling effort meets the overall quality objectives for the project. Development or revision of new models also must be supported by a QAPP that describes the objectives for the model, the quality criteria that will be applied to the model, and the procedures for evaluating whether the model meets those criteria.

QA Project Plan Requirements

The activities in this work assignment involve gathering, evaluating, analyzing, and otherwise using existing environmental data (also known as “secondary” use of data). This work assignment also involves collection of new data, such as collection of data from companies through Clean Water Act (CWA) § 308 questionnaires. In a previous work assignment the Contractor developed a project specific QAPP for the Petroleum Refining Detailed Study. In support of this work assignment, the Contractor shall ensure that the work plan provides enough detail to clearly describe:

- Specific objectives of the project(s) supported by this work assignment, including typical questions that must be answered when collecting and analyzing existing data to support the development of effluent guidelines industry studies, in this case, for Petroleum Refining industry.
- The type of data to be gathered or used under this work assignment to support the project objectives—including data from search engines, federal databases, EPA databases—as a well as a rationale for when those databases are appropriate and what data available in each will support the project
- The quality objectives needed to ensure the data will support the project objectives, and
- The QA/QC activities to be performed to ensure that any results obtained are documented and are of the type, quality, transparency, and reproducibility needed.

The contractor shall be responsible for providing supplemental QA/QC information in the PR Industry Self-Sampling Plan for new data collection activities described in Task 4. The PR Industry Self-Sampling Plan shall contain supplemental QA/QC information that is currently addressed in the existing PQAPP. **Table 6-2** at the end of this Task demonstrates the supplemental QA/QC information that must be included in this Plan for collection of new data.

Additional QA Documentation Required

The EPA Quality Manual for Environmental Programs (CIO 2105-P-01-0, May 2000) requires published Agency reports containing environmental data to be accompanied by a readily identifiable section or appendix that discusses the quality of the data and any limitations on the use of the data with respect to their originally intended application. The EPA Quality Manual further requires Agency reports to be reviewed by the QA manager (or other authorized official) before publication to ensure that an adequate discussion of QA and QC activities is included. The purpose of the review is to ensure the reports provide enough information to enable a knowledgeable reader to determine if the technical and quality goals were met for the intended use of the data. Reports should include applicable statements regarding the use of any environmental data presented as a caution about possible misuse of the data for other purposes.

For example, a Technical Support Document or Study Report must include a clear discussion of the quality management strategies (including the project goals and objectives, quality objectives and criteria, and QA/QC practices) that were employed to control and document the quality of data generated and used. These documents should also discuss any deviations from procedures documented in the EPA-approved QAPP(s) supporting the project, the reasons for those deviations, any impact of those deviations had on data quality, and steps taken to mitigate data quality issues.

In support of this Agency requirement, all major deliverables (e.g., Reports) produced by the Contractor under this work assignment must include a discussion of the QA/QC activities that were performed to support the deliverable, and this discussion must provide a sufficient level of detail to allow the EAD QA Coordinator (or designee) to determine if the QA/QC strategies implemented for the project sufficiently support the intended use of the data. Upon receipt, the WACOR will review each applicable report and certify whether the Contractor has adhered to the QA requirements documented in the Contractor's PQAPP.

The Contractor also shall provide EPA with monthly reports of QA activities performed during implementation of this work assignment. These monthly QA reports shall identify QA activities performed to support implementation of this work assignment, problems encountered, deviations from the QAPP, and corrective actions taken. If desired, the Contractor may include this as a part of the contract-required monthly financial/technical progress report.

TASK 6 DELIVERABLES	DEADLINES
Revised QAPP	10 days after notification from WACOR that a revised QAPP is needed.
Final QAPP	7 days after feedback from WACOR
Monthly reports of QA work performed (may be included in the Contractor's monthly progress report)	Monthly

Table 6-2. QAPP Elements that Require Additional Explanation in PR Industry Self-Sampling Plan under Tasks 3 and 5 for PR 308 Questionnaire

QAPP Element	Sufficiently Addressed in PQAPP or Not Applicable to Project	Additional Detail Needed in QAPP	Explanatory Comments Regarding Additional Detail Needed
A1. Title & Approval Sheet		X	Self-sampling plan will require approval and signature
Project title		X	
Organization's name		X	
Effective date and/or version identifier		X	
Dated signature of Organization's project manager		X	
Dated signature of Organization's QA manager		X	
Other signatures, as needed (e.g., EAD Project Officer, EAD QA Coordinator)		X	

QAPP Element	Sufficiently Addressed in PQAPP or Not Applicable to Project	Additional Detail Needed in QAPP	Explanatory Comments Regarding Additional Detail Needed
Revision History		X	
A2. Table of Contents		X	Update
Includes sections, figures, tables, references, and appendices		X	
Document control information indicated (when required by the EPA Project Manager and QA Manager)		X	
A3. Distribution List		X	Update
Includes all individuals who are to implement or otherwise receive the QAPP and identifies their organization		X	
A4. Project/Task Organization		X	Update to identify specific personnel and roles/responsibilities for Task 3. Include specific details, such as laboratory QA/QC personnel.
Identifies key individuals with their responsibilities (e.g., data users, decision makers, project QA manager, Subcontractors, etc.) and contact info.		X	
Organization chart shows lines of authority & reporting responsibilities		X	
Project QA manager position indicates independence from unit collecting/using data		X	
A5. Problem Definition/Background		X	Describe specific data collection goals of project to be obtained through field sampling.
Clearly states problem to be resolved, decision to be made, or hypothesis to be tested		X	
Identifies project objectives or goals		X	
Historical & background information		X	
Cites applicable technical, regulatory, or program-specific quality standards, criteria, or objectives		X	
A6. Project/Task Description		X	Describe specific sampling activities to be conducted, sample locations, analytes, QA/QC measures, etc.
List measurements to be made/data to obtain		X	
Notes special personnel or equipment requirements		X	
Provides work schedule		X	
A7. Quality Objectives & Criteria for Measurement Data		X	Describe specific quality and measurement objectives to be utilized
States quality objectives and limits, both qualitatively & quantitatively		X	
States & characterizes measurement quality objectives as to applicable action levels or criteria		X	
A8. Special Training Requirements/ Certifications		X	Describe any specific training or certification requirements needed and procedures for training, as necessary
Identifies specialized skills, training or certification requirements		X	

QAPP Element	Sufficiently Addressed in PQAPP or Not Applicable to Project	Additional Detail Needed in QAPP	Explanatory Comments Regarding Additional Detail Needed
Discusses how this training will be provided/the necessary skills will be assured and documented		X	
A9. Documents & Records		X	Describe what data will be generated, how data will be obtained/presented, how QA/QC measures will be documented, procedures for record keeping, etc.
Lists information & records to be included in data report (e.g., raw data, field logs, results of QC checks, problems encountered)		X	
Notes required project & QA records/reports		X	
Gives retention time and location for records and reports		X	
B1. Sampling Process Design (Experimental Design)		X	Fully document sampling design and factors such as matrix interferences due to TDS, sampling equipment, etc.
Types and number of samples required		X	
Sampling network design & rationale for design		X	
Sampling locations & frequency of sampling		X	
Sample matrices		X	
Classification of each measurement parameter as either critical or needed for information only		X	
Validation study information, for non-standard situations		X	
B2. Sampling Method Requirements		X	Fully describe analytical methods to be utilized, sampling techniques, equipment, etc.
Identifies sample collection procedures & methods		X	
Lists equipment needs		X	
Identifies support facilities		X	
Identifies individuals responsible for corrective action		X	
B3. Sample Handling & Custody Requirements		X	Fully document sample handling, preservation, shipping and tracking
Notes sample handling requirements		X	
Notes chain of custody procedures, if required	X		
B4. Analytical Methods Requirements		X	Fully describe and reference both field and laboratory methods to be utilized and specific requirements for laboratories utilized
Identifies analytical methods to be followed (with all options) & required equipment		X	
Specifies any specific method performance criteria		X	
States requested lab turnaround time		X	
Provides validation information for non-standard methods		X	
Identifies procedures to follow when failures occur		X	
Identifies individuals responsible for corrective action and appropriate documentation		X	

QAPP Element	Sufficiently Addressed in PQAPP or Not Applicable to Project	Additional Detail Needed in QAPP	Explanatory Comments Regarding Additional Detail Needed
B5. Quality Control Requirements		X	Fully document QC procedures and goals for field and laboratory analyses
Identifies QC procedures & frequency for each sampling analysis, or measurement technique, as well as associated acceptance criteria and corrective action		X	
Procedures used to calculate QC statistics (e.g., precision, bias, accuracy)		X	
B6. Instrument/Equipment Testing, Inspection, and Maintenance Requirements		X	Provide direction for facility to fully document relevant requirements and procedures for both field analytes and laboratory analyses
Identifies acceptance testing of sampling and measurement systems		X	
Describes equipment needing maintenance and frequency for such maintenance		X	
Notes availability & location of spare parts		X	
B7. Instrument Calibration & Frequency		X	Provide direction to facility for field instruments
Identifies equipment needing calibration and frequency for such calibration		X	
Notes required calibration standards and/or equipment		X	
Cites calibration records & manner traceable to equipment		X	
B8. Inspection/Acceptance Requirements for Supplies & Consumables		X	Document relevant criteria
States acceptance criteria for supplies & consumables		X	
Notes responsible individuals		X	
B9. Data Acquisition Requirements for Non-Direct Measurements	X		
Identifies type of data needed from non-measurement sources (e.g., computer databases and literature files), along with acceptance criteria for their use			
Describes any limitations of such data			
B10. Data Management		X	Update to consider laboratory/field collected data
Describes standard record keeping & data storage and retrieval requirements	X		
Checklist or standard forms attached to QAPP		X	
Describes data handling equipment & procedures used to process, compile and analyze data (e.g., required computer hardware & software)	X		
C1. Assessment and Response Actions		X	Update to consider laboratory/field collected data
Lists required number, frequency, & type of assessments, with approximate date & names of responsible personnel		X	
Identifies individuals responsible for corrective actions		X	

QAPP Element	Sufficiently Addressed in PQAPP or Not Applicable to Project	Additional Detail Needed in QAPP	Explanatory Comments Regarding Additional Detail Needed
C2. Reports to Management		X	Update to consider laboratory/field collected data
Identifies the preparer and recipients of reports			
Identifies frequency and distribution of reports for:			
• Project status			
• Results of performance evaluations & audits			
• Results of periodic data quality assessments			
• Any significant QA problems			
D1. Data Review, Verification & Validation		X	Update to consider laboratory/field collected data
States criteria for accepting, rejecting, or qualifying data			
Includes project-specific calculations or algorithms			
D2. Verification & Validation Methods		X	Update to consider laboratory/field collected data
Describes process for data verification and validation			
Identifies issue resolution procedure and responsible individuals			
Identifies method for conveying these results to data users			
D3. Reconciliation with User Requirements		X	Update to consider laboratory/field collected data
Describes process for reconciling with DQOs and reporting limitations on use of data			

Task 7: Management of Records and Confidential Business Information

The contractor shall assemble and maintain a record of all documents, studies, information and data relevant to the Detailed Study. The contractor shall maintain an index of record materials and deliver the index to the WACOR quarterly.

During the course of the work assignment, the contractor shall be accessing and evaluating CBI. As such, the contractor shall adhere to EPA's CBI policy and procedures as described in the contract performance work statement, Section 3.0, for all tasks in this WA, as applicable. The contractor shall obtain CBI security clearance to use CBI information as outlined in Section 3.0 of Contract EP-C-12-021. The contractor shall utilize CBI information in accordance with contract requirements and limitations to include using its most recent "Security Plan for Handling Confidential Business Information under the Clean Water Act." The contractor shall also utilize CBI information in accordance with contract requirements and limitations, including the TSCA CBI security plan as required.

TASK 7 DELIVERABLES	DEADLINES
Index of study materials	Quarterly
A CBI program in compliance with the requirements of contract EP-C-12-021 and the requirements of the contractor's CBI Plan.	Ongoing

Task 8: Site Visits

The contractor shall provide support to EPA in conducting site visits at petroleum refining facilities. Support shall include identifying candidate facilities, scheduling conference calls with facility personnel to obtain detailed facility information and to schedule visits, obtaining operational information from facilities (treatment technologies in place, crude oil types processed, air pollution control, facility size and flow rates, existing monitoring data, etc.), drafting and finalizing site visit reports and conducting follow-up activities.

The contractor shall attend site visits in order to obtain, evaluate and document facility information and to assist EPA in identifying facilities that may be candidates for subsequent sampling activities. For purposes of preparing a cost estimate, the contractor shall assume that six (6) one-day site visits (three trips with two visits in each trip) will be conducted to facilities across the U.S. during this work assignment period of performance.

The contractor shall provide draft reports of each site visited to the WACOR for review. Once the WACOR's comments are incorporated, the contractor shall provide the WACOR with a revised draft report to send to the facility contact for review and comment. The contractor shall incorporate facility comments and finalize the report for inclusion in the administrative record. If the facility has claimed "Confidential Business Information" (CBI), the contractor shall prepare a sanitized version of the report for the public record. The contractor shall prepare draft and final site visit reports as indicated in the Task 8 Deliverables Table below.

TASK 8 DELIVERABLES	DEADLINES
Draft Site Visit Report	14 Days after completion of site visit
Final Site Visit Report	14 Days after receipt of comments from EPA

Task 9: Data Compilation and Analysis

The contractor shall use the data and information collected during this option period or in previous option periods and updated as necessary in Task 2, the Data Request Questionnaire (Task 3), the industry self-sampling program (Task 4), and site visits (Task 8) to conduct the following tasks:

Compile a Detailed Study Database: The contractor shall design, develop, and populate a database for the detailed study that will contain all of the information gathered in this

work assignment and previous work assignments. For example, all information gathered about a particular refinery should be retrievable from a single database.

Characterize Pollutant Discharges: The contractor shall characterize typical petroleum refineries in terms of wastewater generation and pollutant discharge. Wastewater sources shall be characterized in terms of flow, frequency of discharge, and the types and amounts of pollutant constituents to determine the total pollutant discharge load from the prototypical facility or facilities. If necessary, the contractor may prioritize its analysis of wastewater sources based on total mass discharge of pollutants generated.

Develop Candidate Technology Options: The contractor shall develop candidate technology options to control wastewater pollutants of concern upon direction by the WACOR. Candidate technology options will consider both pollution prevention practices and end-of-pipe treatment technologies identified based on an understanding of the industry, including wastewater sources, volumes, pollutants, and available pollutant controls.

Estimate Costs and Pollutant Reductions: The contractor shall calculate order-of-magnitude compliance costs and pollutant reductions associated with the candidate technology options upon direction by the WACOR. One possible approach for this task would estimate the costs and pollutant reductions associated with installing the candidate technology options at the prototype facilities, and then scaling them to represent groups of facilities within the entire industry. The costs and pollutant reductions shall be presented in a manner that can be used to predict whether revised national effluent limitations would be cost-effective/cost-reasonable

The contractor shall provide data summaries and analyses based on questionnaire data, and related tasks based on written technical direction from the WACOR. In addition, the contractor shall analyze survey data to develop national estimates or other descriptive statistics for the industry and its operational practices, wastewater generation, and discharges as specified in written technical direction.

TASK 9 DELIVERABLES	DEADLINES
Develop Detailed Study Database	As directed by WACOR
Populate Detailed Study Database	As directed by WACOR
Candidate Technology Options	As directed by WACOR
Costs and Pollutant Loads	As directed by WACOR
National estimates and descriptive statistics for future incorporation in Detailed Study Report.	September 20, 2017

EPA United States Environmental Protection Agency Washington, DC 20460 Work Assignment						Work Assignment Number 4-55			
						<input type="checkbox"/> Other <input type="checkbox"/> Amendment Number:			
Contract Number EP-C-12-021		Contract Period 09/26/2012 To 09/25/2017 Base Option Period Number 4		Title of Work Assignment/SF Site Name Petroleum Refining Study					
Contractor EASTERN RESEARCH GROUP, INC.				Specify Section and paragraph of Contract SOW See PWS					
Purpose: <input checked="" type="checkbox"/> Work Assignment <input type="checkbox"/> Work Assignment Close-Out <input type="checkbox"/> Work Assignment Amendment <input type="checkbox"/> Incremental Funding <input checked="" type="checkbox"/> Work Plan Approval						Period of Performance From 10/13/2016 To 09/25/2017			
Comments:									
<input type="checkbox"/> Superfund Accounting and Appropriations Data <input checked="" type="checkbox"/> Non-Superfund									
Note: To report additional accounting and appropriations data use EPA Form 1900-69A.									
SFO <input type="checkbox"/> (Max 2)									
Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars) (Cents)	Site/Project (Max 8)	Cost Org/Code
1									
2									
3									
4									
5									
Authorized Work Assignment Ceiling									
Contract Period:		Cost/Fee: \$0.00		LOE: 0					
09/26/2012 To 09/25/2017									
This Action:		\$485,834.00		5,000					
Total:		\$485,834.00		5,000					
Work Plan / Cost Estimate Approvals									
Contractor WP Dated: 11/09/2016		Cost/Fee \$485,834.00		LOE: 5,000					
Cumulative Approved:		Cost/Fee \$485,834.00		LOE: 5,000					
Work Assignment Manager Name Phillip Flanders <div style="display: flex; justify-content: space-between;"> <div>_____ (Signature)</div> <div>_____ (Date)</div> </div>						Branch/Mail Code:			
						Phone Number: 202-566-8323			
						FAX Number:			
Project Officer Name Meghan Hessenauer <div style="display: flex; justify-content: space-between;"> <div>_____ (Signature)</div> <div>_____ (Date)</div> </div>						Branch/Mail Code:			
						Phone Number: 202-566-1040			
						FAX Number:			
Other Agency Official Name <div style="display: flex; justify-content: space-between;"> <div>_____ (Signature)</div> <div>_____ (Date)</div> </div>						Branch/Mail Code:			
						Phone Number:			
						FAX Number:			
Contracting Official Name Brad Heath <div style="display: flex; justify-content: space-between;"> <div>_____ (Signature)</div> <div>_____ (Date)</div> </div>						Branch/Mail Code:			
						Phone Number: 513-487-2352			
						FAX Number:			

EPA United States Environmental Protection Agency Washington, DC 20460 Work Assignment						Work Assignment Number 4-59			
						<input type="checkbox"/> Other <input type="checkbox"/> Amendment Number:			
Contract Number EP-C-12-021			Contract Period 09/26/2012 To 09/25/2017 Base Option Period Number 4			Title of Work Assignment/SF Site Name State Nutrient Reduction			
Contractor EASTERN RESEARCH GROUP, INC.				Specify Section and paragraph of Contract SOW See PWS					
Purpose: <input checked="" type="checkbox"/> Work Assignment <input type="checkbox"/> Work Assignment Close-Out <input type="checkbox"/> Work Assignment Amendment <input type="checkbox"/> Incremental Funding <input type="checkbox"/> Work Plan Approval						Period of Performance From 09/26/2016 To 09/25/2017			
Comments: The contractor shall not commence work on this work assignment until September 26, 2016.									
<div style="display: flex; justify-content: space-between;"> <input type="checkbox"/> Superfund Accounting and Appropriations Data <input checked="" type="checkbox"/> Non-Superfund </div>									
Note: To report additional accounting and appropriations data use EPA Form 1900-69A.									
SFO <input type="checkbox"/> (Max 2)									
Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars) (Cents)	Site/Project (Max 8)	Cost Org/Code
1									
2									
3									
4									
5									
Authorized Work Assignment Ceiling									
Contract Period:		Cost/Fee:		LOE:					
09/26/2012 To 09/25/2017									
This Action:									
Total:									
Work Plan / Cost Estimate Approvals									
Contractor WP Dated:				Cost/Fee		LOE:			
Cumulative Approved:				Cost/Fee		LOE:			
Work Assignment Manager Name Paul Shriner						Branch/Mail Code:			
<div style="display: flex; justify-content: space-between;"> <div>_____ (Signature)</div> <div>_____ (Date)</div> </div>						Phone Number: 202-566-1076			
						FAX Number:			
Project Officer Name Meghan Hessenauer						Branch/Mail Code:			
<div style="display: flex; justify-content: space-between;"> <div>_____ (Signature)</div> <div>_____ (Date)</div> </div>						Phone Number: 202-566-1040			
						FAX Number:			
Other Agency Official Name						Branch/Mail Code:			
<div style="display: flex; justify-content: space-between;"> <div>_____ (Signature)</div> <div>_____ (Date)</div> </div>						Phone Number:			
						FAX Number:			
Contracting Official Name Brad Heath						Branch/Mail Code:			
<div style="display: flex; justify-content: space-between;"> <div>_____ (Signature)</div> <div>_____ (Date)</div> </div>						Phone Number: 513-487-2352			
						FAX Number:			

**Performance Work Statement
Contract EP-C-12-021
Work Assignment 4-59**

Title: Reducing Phosphorus and Nitrogen Pollution through State Nutrient Reduction Activities

Work Assignment Contracting Officer's Representative (WACOR):

Paul Shriner
U.S. EPA/OW/OST/EAD (4303T)
EPA West, Room 6233
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Washington, DC 20460
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Fax: 202-566-1053
E-mail: shriner.paul@epa.gov

Alternate Work Assignment Contracting Officer's Representative (AWACOR):

Tony Tripp
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EPA West, Room 6231G
1200 Pennsylvania Ave., N.W.
Washington, DC 20460
Phone: 202-566-1419
E-mail: tripp.anthony@epa.gov

Period of Performance: September 26, 2016 through September 25, 2017

Estimated LOE: 4,050 hours

Introduction: Over the last 50 years, the amount of nitrogen and phosphorus pollution entering the nation's waters has escalated dramatically. The excess levels of nutrients has degraded drinking water quality and environmental water quality. Nutrients have the potential to become one of the costliest and most challenging environmental problems we face. States need to be able to respond to local water quality needs, and will need a variety of tools and resources to successfully achieve effective and sustained progress towards nutrient reductions.

A framework for partnering with states to address nutrient issues was re-initiated in 2011 by then Acting Assistant Administrator Nancy Stoner in a March 16, 2011 memo "Working in Partnership with States to Address Phosphorus and Nitrogen Pollution through Use of a Framework for State Nutrient Reduction." Recommended framework elements include:

identifying major watersheds that account for a substantial portion of the nitrogen and phosphorus loadings; ensuring effective permitting in targeted/priority watersheds for municipal facilities that contribute to significant measurable nutrient loadings; establishing numeric goals for loading reductions for targeted/priority watersheds; and verifying that load reduction practices are in place. Accountability measures include verifying that load reduction practices are in place. To assess and demonstrate progress in implementing and achieving load reduction goals, a baseline of existing nutrient loads and current best management practices (BMPs) needs to be established, and ongoing sampling and analysis are needed to provide regular seasonal measurements of nutrient loads leaving a watershed.

This work assignment provides support to further EPA's commitment to partnering with stakeholders and collaborating to make greater progress in accelerating the reduction of nutrient loads to the nation's waters. The Office of Water is collecting data to evaluate the nutrient removals and related technology performance by all types of wastewater treatment plants (WTPs), Publicly Owned Treatment Works (POTWs), and/or Water Resource Recovery Facilities (WRRFs) nationwide. The Office of Science and Technology, Engineering and Analysis Division, will be leading the effort. The Office of Science and Technology will provide survey expertise and assistance on the technical portions of this effort. This is a comprehensive data collection effort including a screener survey (conducted as a census) and a detailed technical survey, to be followed by one to two years of sampling and monitoring by select facilities to assess in-plant performance. The effort fills numerous data gaps not addressed by other existing sources of information, including the Clean Water Action Needs Survey (CWNS), existing monitoring data obtained from EPA's Integrated Compliance Information System (ICIS), and the existing literature. The survey would help: establish baseline loads of nutrients to watersheds, identify technologies in place, assess the performance of these technologies, identify operational and management practices that allow WRRFs to maximize the effectiveness of their existing technologies, and collect cost and labor information on these operational and management practices. The information would inform basic policy regarding nutrient contributions from municipalities; support states with information needed to set load-reduction goals; and enable states to reduce loadings through a combination of strengthened permits and reduction measures.

This effort is likely to raise interest and concerns amongst many stakeholders. OST presented the survey concept at a nutrients conference in Denver on July 2016. OST notes the collected information would provide support to numerous programs throughout the Office of Water as well as the Air program. Similarly, environmental groups, other programs, and other federal agencies may support information collection in an area that has many critical data gaps. POTWs, municipalities, the National Association of Clean Water Agencies, and others may view the effort as gearing up to establish additional regulations. Environmental groups will be interested in the data as an indicator of baseline performance as well as a tool for promoting more stringent nutrient limits in a variety of venues. The agricultural community may be critical of the effort, as the detailed information may, as a result of clearly identifying the nutrient contributions of municipalities, result in greater focus on non-point sources of pollution in some watersheds.

Under work assignment 3-59, the contractor provided technical support to EPA in developing both a draft screener survey; the first Federal Register notice seeking OMB approval for an ICR; sampling and monitoring plans; data management and analysis; final reports; and communications of findings. Under this work assignment, the contractor will provide support to EPA with the following tasks:

- Develop a work plan;
- Provide monthly progress reports;
- Assist in developing and maintaining a schedule;
- Develop and maintain a database;
- Prepare quarterly Quality Assurance reports;
- Provide technical support to EPA in evaluating facilities for site visits and sampling, including support of plant specific protocols;
- Provide technical support to EPA for preparing and maintaining documentation and analysis;
- Information Collection Requests (ICR) and related Federal Register (FR) notices for survey approval;
- Literature reviews;
- Prepare reports of data summaries, analyses, and findings; and
- Provide technical support to EPA for briefings and for stakeholder outreach activities.

During this work assignment, the contractor will provide the following deliverables to EPA:

- Work plan and cost estimate;
- Monthly progress reports;
- Any necessary revisions to existing QAPPS and PQAPPs, if required by EPA;
- Quarterly Quality Assurance reports;
- Record items necessary to support two Federal Register notices and an ICR;
- Generation of the survey in an EPA approved format consistent with the Federal Information Technology Acquisition Reform Act (FITARA);
- Mail out of the survey and survey assistance;
- Non-response follow up activities;
- Memorandums describing database development, survey response rate, and database population progress;
- Memorandums documenting the stratification developed for the survey;
- Memorandums documenting various drafts of screener and detailed survey questions sufficiently detailed to track evolution of the surveys;
- QAPPs and related QIA documentation for site-specific site visits and sampling;
- Cost estimates for sampling;
- Data summaries;
- Documentation of data analyses, draft analyses, and supporting materials;
- Communication materials including website materials; and,

- Quick turnaround tasks.

General Work Assignment Requirements:

This Work Assignment falls under paragraphs 3.0, 3.1, 3.2, 3.3, 3.4, and 4.0 of the SOW.

Deliverable Formatting and Terminology. Throughout this Work Assignment, the contractor shall provide draft and final reports to EPA in electronic and hard copy formats. The EPA WACOR and contractor will use the terminology in this work assignment to improve the deliverable review process. See Attachment A of the contract Performance Work Statement. The contractor shall discuss the computer file formats to be used for word processing, spreadsheet, database and graphics with the WACOR prior to file preparation. The WACOR will identify for the contractor which documents will be posted on EPA's webpage; for planning purposes, the contractor may assume the website will be a new webpage hosted by the Office of Science and Technology (OST). These documents posted to the webpage will need to be Section 508 compliant.¹

Travel. EPA anticipates a need for non-local travel by contractor employees and/or subcontractors to support the scope of this work assignment (e.g., site visits activities, outreach, attending scientific/technical conferences, and sampling), not to exceed \$20,000. This may include up to five sets of site visits for the initial phase of study. This will also include travel for purposes of developing, planning, and possible testing of sampling protocols. The contractor will provide specific travel details and costs in a request for travel approval submitted for WACOR review and Contract Level Contracting Officer's Representative (CL-COR) signature before each trip occurs (as specified by the contract per clause H.32).

Confidential Business Information. The contractor will, at all times, adhere to Confidential Business Information (CBI) procedures when handling industry information. The contractor will manage all reports, documents, and other materials and all draft documents developed under this work assignment in accordance with the procedures set forth in its "Office of Science & Technology Confidential Business Information (OST-CBI) Application Security Plan," dated December 5, 2007 or its successor approved plans. See Task 9 for more details.

Identification as Contracting Staff. To avoid the perception that contractor personnel are EPA employees, contractor personnel shall be clearly identified as independent contractors of EPA when participating in events with outside parties and visiting field sites. When speaking with the public the contractor should refer all interpretations of policy to the WACOR.

¹ See <http://www.epa.gov/epahome/accessibility.htm>.

Limitation of Contractor Activities. The contractor will submit drafts of all deliverables to the EPA Work Assignment Manager (WACOR) for review prior to submission of the final product. The contractor will incorporate all WACOR comments into all final deliverables, unless otherwise agreed upon by the WACOR. The contractor will adhere to all applicable EPA management control procedures as implemented by the EPA Contracting Officer (CO), CL-COR and WACOR.

Deliverables. Major technical reports, databases, and final analyses shall be subject to internal contractor peer review by an expert(s) not directly involved in the mainstream Work Assignment tasks. Deliverables will be prepared with proper adherence to EPA style and format requirements.

Deadlines. For the purpose of developing the work plan, the contractor shall assume the deliverable due dates provided with each task. Most of the deadlines are associated with Agency established milestones which are subject to change. Based upon past experience with the planning process, and the nature of site visits and sampling subject to cooperative weather, any changes in schedule tend to result in extensions, rather than shorter schedules. In either case, if the schedule changes then the WACOR, CL-COR, or relevant task manager will change the deliverable deadlines through written technical direction. The WACOR/CL-COR also will use written technical direction to change a deadline if management requires any particular deliverable or draft deliverable earlier than specified in the following tasks. For planning purposes, the following table provides a summary of the major milestones. For planning purposes, the contractor shall assume the 1st FR notice for the screener survey is unlikely to occur during the period of performance for this work assignment, and similarly that ICR approval for a detailed survey is unlikely to occur during the period of performance for this work assignment.

Major Milestones
Conduct external outreach and solicit comment on draft survey (1 month) by October 30, 2016
Revised Screener Survey based on 1 st FR notice comments (1 month) by November 30, 2016
Publish 2 nd FR notice and obtain ICR approval (approximately 2 months) – January or February 2017
Revise mailing list, prepare to implement survey instrument (April 2017)

Conferences, Meetings and Other Events: No single event under this Work Assignment is anticipated to exceed \$20,000. The Contractor shall immediately notify the EPA Contracting Officer, CL-COR and WACOR of any anticipated event involving support for a meeting, conference, workshop, symposium, retreat, seminar or training that may potentially incur \$20,000 or more in cost during performance. Conference expenses are all direct and indirect costs paid by the government and include any associated authorized travel and per diem expenses, room charges for official business, audiovisual use, light refreshments, registration fees, ground transportation and other expenses as defined by the Federal Travel Regulations. All outlays for conference preparation should be included, but the federal employee time for

conference preparation should not be included. After notifying EPA of the potential to reach this threshold, the Contractor shall not proceed with the task(s) until authorized to do so by the Contracting Officer.

Specific Tasks:

Task 1 – Program Management:

The contractor shall develop a work plan describing the necessary steps and estimated hours to complete each of the tasks included in this work assignment. The work plan shall also include a list of the key personnel to participate in the work assignment. The contractor shall also estimate direct costs such as travel, computer costs, typing, etc.

The contractor shall provide electronic copies of the monthly progress reports to the WACOR and CL-COR. Each progress report shall describe the technical work and expenditures for the same time period as the corresponding invoice. The reports shall list by task the amount of work completed and include a table of hours by personnel for each task. The reports also shall identify any problems or difficulties.

In addition to the monthly progress reports, the contractor shall prepare monthly status summaries (in a Microsoft Excel compatible format) to the WACOR and CL-COR. The monthly status reports shall list the following information by task: budgeted LOE for each task, summaries of current and cumulative costs and LOE expended for the reporting period. The monthly summaries of costs and expenditures LOE shall be provided prior to the progress report. For the purposes of developing this work plan, the contractor may assume the following hours by Task.

Task	Description	Hours
1	Work Assignment Management	300
2	Data Quality Assurance Administration	150
3	Data Management	250
4	Literature Review and Investigation	50
5	Survey Development	1900
6	Preparation and Publication of ICR	700
7	Data Analysis and Reports	400

8	Records Management	260
9	CBI Procedures	40
	TOTAL	4050

As part of this task, the contractor will prepare an annotated timeline consistent with the milestones listed above. This annotated timeline will describe the major elements of developing these materials or conducting these investigations from beginning to end and their timing and LOE. The WACOR will use the timeline to aid in identification of all major project tasks, track the project's progress, and coordinate all aspects of the project. For planning purposes, assume the full project timeline will span 5 years. The contractor will maintain, update, and revise the annotated timeline as needed based on written Technical Direction by the WACOR.

TASK 1 – DELIVERABLES	
Deliverable	Deadline
Work Plan and Cost Estimate	• 15 days from issuance of work assignment.
Progress Reports	• Monthly
1 st Draft - Draft Annotated Timeline	• 21 days from issuance of work assignment.
Revised Annotated Timeline	• Quarterly, or within 5 days of WACOR written request.

Task 2 – Quality Assurance:

Task 2: Quality Assurance

2.1 Background

Quality Assurance Project Plans are required under the Agency's Quality Assurance Policy CIO-2105, formerly EPA Order 5360.1 A2 (May 2000), and implementing guidance CIO-2105-P-01-0 (May 2000). All projects that involve the generation, collection, analysis, and use of environmental data must have an approved Quality Assurance Project Plan (QAPP) in place prior to the commencement of the work. This includes both newly generated environmental data as well as that which is already existing. Examples of these environmental data operations are provided in Table 1-1 below.

Table 1-1. Examples of work that involves the collection, generation, evaluation, analysis, or use of environmental data

Item	Examples
Data	Includes field sampling information (sample location information, flow measurements, temperature, pH, physical observations, etc.), laboratory measurements (e.g., chemical, physical, biological, radiological measurements), data collected from questionnaires, economic data, census data, and any

Table 1-1. Examples of work that involves the collection, generation, evaluation, analysis, or use of environmental data

Item	Examples
	other types of existing data (i.e., data generated for a different purpose or generated by a different organization)
Data generation	Includes field studies, laboratory studies, and generation of modeling output
Data collection	Includes field surveys, questionnaire surveys, literature searches, and third party data
Data evaluation	Includes data inspection, review, assessment, and validation
Data analysis	Includes statistical, engineering, and economic analysis, and testing, evaluation, and validation of methods and models; database creation, data extraction, and data manipulation
Data Use	Any use of data to support EPA decisions, regulations, policy, publications, or tools (including effluent guidelines, 304(m) program, standards, environmental assessments, and models, tools, or reports disseminated by EPA to assist other organizations in implementing environmental programs)

QAPPs are required for the development or revision of models and software that support the generation, collection, evaluation, analysis, or use of data. (A model is set of equations and assumptions used to predict unknown data.) When existing models are used as a tool to generate or evaluate data, the project QAPP must describe the model and explain how it will be used and how its output will be evaluated to ensure the modeling effort meets the overall quality objectives for the project. Development or revision of new models also must be supported by a QAPP that describes the objectives for the model, the quality criteria that will be applied to the model, and the procedures for evaluating whether the model meets those criteria.

2.2 QA Project Plan Requirements

The Contractor has previously prepared a contract-wide Programmatic QAPP (PQAPP) for Contract EP-C-12-021. This PQAPP describes, in a single document, information that is not site or time-specific, but applies throughout the program (i.e., the duration of the contract). When tasked with preparing the PQAPP, the Contractor was informed that the PQAPP may need to be supplemented with project-specific details to support individual work assignments that involve the collection, generation, evaluation, analysis, or use of environmental data for which the PQAPP may not be applicable. As a result, the Contractor prepared a Supplemental QAPP (SQAPP) specific to the IWTT Project described in Task 8 of that project. Both the PQAPP and SQAPP have been approved by EPA and cover activities envisioned under this work assignment... For planning purposes, the Contractor may assume they will continue operating under the existing PQAPP and SQAPP and that these two documents address the initial QA requirements for this work assignment. The contractor shall prepare an addendum to the PQAPP/SQAPP to address any additional or different QA requirements for this work assignment.

The activities in this work assignment involve gathering, evaluating, analyzing, and otherwise using existing environmental data (also known as “secondary data”). In support of this work assignment, the Contractor shall ensure that the work plan provides enough detail to clearly describe:

- Specific objectives of the project(s) supported by this work assignment, including typical questions that must be answered when collecting and analyzing existing data to support the development of EPA's biennial 304m plan.
- The type of data to be gathered or used under this work assignment to support the project objectives—including data from search engines, federal databases, EPA databases—as a well as a rationale for when those databases are appropriate and what data available in each will support the project
- The quality objectives needed to ensure the data will support the project objectives, and
- The QA/QC activities to be performed to ensure that any results obtained are documented and are of the type, quality, transparency, and reproducibility needed.

2.3 Additional QA Documentation Required

The EPA Quality Manual for Environmental Programs (CIO 2105-P-01-0, May 2000) requires published Agency reports containing environmental data to be accompanied by a readily identifiable section or appendix that discusses the quality of the data and any limitations on the use of the data with respect to their originally intended application. The EPA Quality Manual further requires Agency reports to be reviewed by the QA manager (or other authorized official) before publication to ensure that an adequate discussion of QA and QC activities is included. The purpose of the review is to ensure the reports provide enough information to enable a knowledgeable reader to determine if the technical and quality goals were met for the intended use of the data. Reports should include applicable statements regarding the use of any environmental data presented as a caution about possible misuse of the data for other purposes. For example, a Study Report must include a clear discussion of the quality management strategies (including the project goals and objectives, quality objectives and criteria, and QA/QC practices) that were employed to control and document the quality of data generated and used. Analytical Reports shall include a discussion of sensitivity analysis and robustness of the data set. These documents should also discuss any deviations from procedures documented in the EPA-approved QAPP(s) supporting the project, the reasons for those deviations, any impact of those deviations had on data quality, and steps taken to mitigate data quality issues.

In support of this Agency requirement, all major deliverables (e.g., Technical Support Documents, Study Reports, Analytical Methods) produced by the Contractor under this work assignment must include a discussion of the QA/QC activities that were performed to support the deliverable, and this discussion must provide a sufficient level of detail to allow the EAD QA Coordinator (or designee) to determine if the QA/QC strategies implemented for the project sufficiently support the intended use of the data.

The Contractor also shall provide EPA with monthly reports of QA activities performed during implementation of this work assignment. These monthly QA reports shall identify QA activities performed to support implementation of this work assignment, problems encountered, deviations from the QAPP, and corrective actions taken. If desired, the Contractor may include this as a part of the contract-required monthly financial/technical progress report.

2.4 Data Quality Act/Information Quality Guidelines Requirements

The Data Quality Act (also known as the Information Quality Act) requires EPA to ensure that influential information disseminated by the Agency is sufficiently transparent in terms of data and methods of analysis that the information is capable of being substantially reproduced. To support compliance with these data transparency/ data reproducibility requirements, EPA plans to include QAPPs as part of any rulemaking record documentation to be made available to the public. (This includes PQAPPs and SQAPPs.) The Contractor may claim information in QAPPs as confidential; if the Contractor chooses to do so, the Contractor shall submit a public version and a confidential version at the time the QAPP is submitted for approval by EPA.

Information contained in the approved QAPP shall be transparent and reproducible and meet the requirements of the Data Quality Act for influential information. EPA's Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity, of Information Disseminated by the Environmental Protection Agency (EPA/260R-02-008, October 2002), referred to as "EPA's Information Quality Guidelines," describe EPA procedures for meeting Data Quality Act requirements. Section 6.3 of EPA's Information Quality Guidelines indicate that "especially rigorous robustness checks" should be applied in circumstances where quality-related information cannot be disclosed due to confidentiality issues. Where applicable, the Contractors should indicate which results were obtained using the tools (SOPs, checklists, and guidelines) that the Contractor designates as confidential so that the EPA WACOR can easily identify the areas that shall require rigorous robustness checks and document that those checks have been performed. At the discretion of the EPA WACOR through technical directives, the Contractors may be requested to prepare pre-dissemination review checklists as described in Section 5.5 of the Office of Water - Quality Management Plan, February 2009.

Deliverables and schedule under Task 2

TASK 2 – DELIVERABLES	
Deliverable	Deadline
Addendum to SQAPP	• 10 days after notification by the WACOR via Technical Direction (TD) that an addendum to the SQAPP is needed.
Revisions to S/PQAPP based on EPA feedback	• 7 days after receipt of EPA feedback from WACOR via TD.
Final SQAPP for this Work Assignment	• 5 days after EPA feedback from WACOR via TD.
PQAPP/SQAPP progress reports	• Monthly.

Task 3 – Data Management:

Screeners and detailed questionnaires will be developed and administered to collect baseline, operational, and environmental data. The contractor shall maintain a database including facility

responses including: facility specific characteristics such as design capacity and average daily flow; technology train and related technical data; waterbody; influent data; effluent data; in-plant data; costs of operating unit processes. This task includes management of input files, raw data, and tracking spreadsheets. Under this task, the contractor shall maintain the integrity and version control of the database.

TASK 3 – DELIVERABLES	
Deliverable	Deadline
Revised database management concept memo	• 7 days after receipt of EPA feedback from WACOR via TD.
1 st Draft database	• March 30, 2017.
Revised database	• 5 days after EPA feedback from WACOR via TD.

Task 4 – Literature Review and Site Investigation

This task includes supplemental data collection, including literature reviews and site visits, to inform the survey development process. EPA will provide the initial list of key references and existing databases to support this effort, including the sample frame developed by OCSPP (to be provided by the WACOR). This task includes coordinating with States to obtain general permit information and/or NPDES listings for WRRFs. To further inform the survey development, one or more site visits may be conducted. For planning purposes, the contractor shall assume these site visits will be to two or more facilities clustered in a single geographic region, each trip will span 3 to 5 days, and that no more than five such trips will be conducted during the POP.

TASK 4– DELIVERABLES	
Deliverable	Date
Review of States databases and other general permit references	• Within 30 days of written direction by the WACOR, pending screener ICR approval.
Suggestions and approach to supplemental site visits	• According to a schedule developed by the contractor and approved by the WACOR via TD.

Task 5 – Survey Development:

Under this task, the contractor shall support EPA in developing the sample frame, the survey approach, the screener questions, and the technical survey questions. This task will include development of a sampling protocol, suggested analyte(s), criteria for identification of technologies, representative sites and facility locations for sampling, cost estimates for sampling, and related tasks. This task also includes development of site-specific sampling plans in coordination with the selected sites. Subsequent drafts of each stage of the survey may include incorporation of comments and suggestions from the EPA workgroup, states, and municipalities, the public and other interested stakeholders, as approved by the WACOR. The contractor will

submit materials to EPA for review and approval prior to their implementation. When conducting outreach activities, the contractor personnel will clearly identify themselves as contractor employees both orally and via the use of identification badges.

TASK 5– DELIVERABLES	
Deliverable	Date
Revised screener survey based on comments from stakeholders and comments from the 1st Federal Register notice for the screener	• According to a schedule developed by the contractor and approved by the WACOR via TD.
1 st draft technical survey	• According to a schedule developed by the contractor and approved by the WACOR via TD.
1 st draft sampling approach and concept memo	• According to a schedule developed by the contractor and approved by the WACOR via TD.

Task 6 - Preparation and Publication of the ICR:

The contractor shall support EPA in preparing the second Federal Register notice, the supporting statement, any supplemental notifications, and all necessary supporting documentation. The contractor shall provide support in writing, formatting, proofing, editing and reviewing and revising the notice and related documents. The contractor shall provide support for the publication, web posting and possible sharing of information in public meetings and other outreach efforts, including 508 formatting of all necessary documents. Note the assembly of all record information for the public and confidential records falls under Task 8. The contractor will submit materials to EPA for review and approval prior to their implementation. When conducting outreach activities, the contractor personnel will clearly identify themselves as contractor employees both orally and via the use of identification badges. Typically the contractor will be required to provide such products within 7 days or less. The contractor shall coordinate with the Office of Water Docket office to ensure the record will meet the docket's requirements including any FMDS requirements. This task is based on the 1st FR notice and the draft ICR supporting statement developed by the contractor under WA 3-59.

TASK 6– DELIVERABLES	
Deliverable	Date
Draft of the 2 nd FR notice	• According to a schedule developed by the contractor and approved by the WACOR via TD.
Revised ICR supporting statement	• According to a schedule developed by the contractor and approved by the WACOR via TD.
Revisions to draft notices and supporting statement based on WACOR comments	• Within 7 working days after being provided by the WACOR via TD.

Task 7 –Data Analysis and Reports

The contractor shall support EPA in completing reports and analysis of data collected through the survey effort. Such analysis may include profiles, national level assessments, state level assessment, trends, and possible approaches to implementing the technologies to achieve the levels of performance identified by the survey and sampling effort. The contractor shall complete the preparation of all necessary supporting documentation, data and information. The contractor shall provide support in writing, formatting, proofing, editing and reviewing draft reports to create a final reports. The contractor shall provide support for the publication, web posting and possible sharing of information in public meetings and other outreach efforts, including 508 formatting of all necessary documents.

TASK 7– DELIVERABLES	
Deliverable	Date
Outline and revisions to database concept memo	• According to a schedule developed by the contractor and approved by the WACOR via TD.

Task 8 –Records Management

This task requires the contractor to complete any records management. The contractor shall finish assembling all information for the public and confidential records for the survey. This task also includes loading of relevant records to the docket created for the ICR, related FR notices, and related comments. The contractor shall coordinate with the Office of Water Docket office to ensure the record will meet the docket’s requirements including any Federal Docket Management System (FDMS) requirements.

Since there will be no docket for most of the work completed under this work assignment, it is appropriate to properly archive those records which should be preserved, and to destroy non-records as well as those records for which EAD no longer has any need of retention. Any CBI in the records above will be handled as described in Task 9. As a general matter, EAD tasks the Contractor with disposal of any non-CBI.

TASK 8 – DELIVERABLES	
Deliverable	Deadline
Continued Disposal of non-CBI	According to a schedule developed by the contractor and approved by the WACOR via TD.
List of record items	Quarterly
Upload and list of docket materials	Within 5 days of written direction by the WACOR.

Task 9 – Confidential Business Information Procedures:

During the course of the work assignment, the contractor may be accessing and evaluating CBI. As such, the contractor shall adhere to EPA's CBI policy and procedures as described in the contract statement of work, Section 1.2. The contractor must maintain CBI security clearance to use CBI information (Refer to Section H of the schedule for security requirements and 70 FR 9070; February 24, 2005). The contractor will not disclose any CBI to anyone other than EPA without prior written approval from the EPA WACOR. The contractor shall utilize CBI in accordance with contract requirements and limitations to include using the “Office of Science & Technology Confidential Business Information (OST-CBI) Application Security Plan,” dated August 1, 2011 or its successor approved plans.

TASK 9 – DELIVERABLES	
Deliverable	Deadline
A CBI program in compliance with the requirements of the contract and the requirements of the contractor’s CBI Plan.	• Ongoing

EPA United States Environmental Protection Agency Washington, DC 20460 Work Assignment						Work Assignment Number 4-59			
						<input type="checkbox"/> Other <input type="checkbox"/> Amendment Number:			
Contract Number EP-C-12-021			Contract Period 09/26/2012 To 09/25/2017 Base Option Period Number 4			Title of Work Assignment/SF Site Name State Nutrient Reduction			
Contractor EASTERN RESEARCH GROUP, INC.				Specify Section and paragraph of Contract SOW See PWS					
Purpose: <input checked="" type="checkbox"/> Work Assignment <input type="checkbox"/> Work Assignment Close-Out <input type="checkbox"/> Work Assignment Amendment <input type="checkbox"/> Incremental Funding <input checked="" type="checkbox"/> Work Plan Approval						Period of Performance From 09/26/2016 To 09/25/2017			
Comments:									
<input type="checkbox"/> Superfund Accounting and Appropriations Data <input checked="" type="checkbox"/> Non-Superfund									
SFO <input type="checkbox"/> Note: To report additional accounting and appropriations date use EPA Form 1900-69A. (Max 2)									
Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars) (Cents)	Site/Project (Max 8)	Cost Org/Code
1									
2									
3									
4									
5									
Authorized Work Assignment Ceiling									
Contract Period: Cost/Fee: \$0.00 LOE: 0 09/26/2012 To 09/25/2017									
This Action: \$540,962.00 4,180									
Total: \$540,962.00 4,180									
Work Plan / Cost Estimate Approvals									
Contractor WP Dated: 10/19/2016 Cost/Fee \$540,962.00 LOE: 4,180									
Cumulative Approved: Cost/Fee \$540,962.00 LOE: 4,180									
Work Assignment Manager Name Paul Shriner <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="display: flex; justify-content: space-between;"> (Signature) (Date) </div>						Branch/Mail Code: Phone Number: 202-566-1076 FAX Number:			
Project Officer Name Meghan Hessenauer <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="display: flex; justify-content: space-between;"> (Signature) (Date) </div>						Branch/Mail Code: Phone Number: 202-566-1040 FAX Number:			
Other Agency Official Name <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="display: flex; justify-content: space-between;"> (Signature) (Date) </div>						Branch/Mail Code: Phone Number: FAX Number:			
Contracting Official Name Brad Heath <div style="border-bottom: 1px solid black; width: 100%;"></div> <div style="display: flex; justify-content: space-between;"> (Signature) (Date) </div>						Branch/Mail Code: Phone Number: 513-487-2352 FAX Number:			